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ABSTRACT

This report of the UNISIST II conference presents the general proceedings of the conference and makes recommendations on the future activities at national, regional, and international levels in the field of scientific and technical information. The opening section reports the welcoming addresses to the delegates and the administrative business of the conference. During the working sessions the conference considered (1) a review of achievements since the UNISIST governmental conference of 1971; (2) the flow of scientific and technological information and its role in development; and (3) strategies for future action at the national, regional, and international levels. The conference prepared four general recommendations addressed to the upcoming United Nations Conference on Science and Technology for Development (with 11 specific recommendations); to member states (with 11 specific recommendations); to Unesco (with 24 specific recommendations); and finally to the Director General of UNESCO. Separate annexes present the conference agenda, addresses delivered during the conference, a listing of conference connected documents, and a list of participants alphabetized by name of country. (RAA)

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UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

INTERGOVERNMENTAL CONFERENCE ON SCIENTIFIC AND TECHNOLOGICAL INFORMATION FOR DEVELOPMENT

UNISIST II

Paris, 28 May - 1 June 1979

FINAL REPORT

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INTRODUCTION

1. The Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II) was held in Paris from 28 May to 1 June 1979. The Director-General of Unesco convened the Conference in accordance with resolution 5/10.1/1 adopted by the General Conference at its twentieth session (1978). The composition of the Conference, which fell in category II of Unesco-sponsored meetings, was determined by the Executive Board at its 106th session in accordance with the provisions of Article 21 of the Regulations for the General Classification of the Various Categories of Meetings convened by Unesco.

2. The Conference was attended by delegates representing 91 Member States of Unesco and 2 non-Member States of Unesco. A total of 35 organizations of the United Nations system, other intergovernmental organizations and international non-governmental organizations and foundations was represented by observers. The Conference was attended, in all, by 234 delegates and 55 observers. The list of participants is given in Annex III.

3. The purpose of the Conference as set out in the Approved Programme and Budget for 1979-1980 was as follows: "The Conference, which will review developments since the UNISIST Intergovernmental Conference of 1971, will make recommendations on future activities in scientific and technical information and will contribute to the United Nations Conference on Science and Technology for Development (UNCSTD)" (20 C/5 Approved, paragraph 5117).

4. Preparations for the Conference began as part of the implementation of the Approved Programme and Budget for 1977-1978 (19 C/5 Approved, paragraph 5013) and took into account the guidance provided by the Intergovernmental Council for the General Information Programme at its first session, 21-25 November 1977.

5. At its first session (30-31 January 1978), the Bureau of the Intergovernmental Council for the General Information Programme outlined the objectives of the Conference and agreed to the establishment of a Conference Programme Committee to aid the Secretariat in its preparation.

6. This Committee discussed at its first meeting the main themes of the Conference and the preparation of the working document.

7. The initial preparatory measures for the Conference were reviewed by the Bureau of the Intergovernmental Council when it met from 4 to 6 July 1978.

8. At its second and third sessions (6-7 September 1978 and 30-31 January 1979) the Conference Programme Committee examined the draft Main Working Document at successive stages of its preparation.

9. The Main Working Document was drawn up according to a plan which followed items 6.1, 6.2 and 6.3 of the provisional agenda of the Conference and comprised the following parts:

Part A reviewed the achievements since the UNISIST Intergovernmental Conference of 1971 and provided background information for their assessment;

Part B dealt with the general problem of the flow and utilization of scientific and technological information and its role in development; and

Part C set out ideas and suggestions that could facilitate the shaping of strategies for future action at the national, regional and international levels and underlined some of the main issues;

An Executive Summary was given at the beginning of the document to assist the Conference in focusing its discussion on the main concepts and issues raised.

10. Mr. Amadou-Mahtar M'Bow, Director-General of Unesco, opened the Conference, accompanied by Mr. Federico Mayor, Deputy Director-General. Mr. Jean Knapp, the Assistant Director-General for Studies and Programming, represented the Director-General throughout the Conference. The Secretary of the Conference was Mr. Jacques Tocatlian, Director of the Division of the General Information Programme. Supporting the Secretary in the organization and conduct of the Conference was the staff of the Division, supplemented by a small group of invited experts.

I. GENERAL REPORT

Inaugural session

11. At the first plenary session, the Director-General of Unesco welcomed the delegates.

12. In his opening address, the Director-General outlined the background to UNISIST, which had originally been conceived as a flexible and progressively evolving system for keeping abreast of the huge volume of increasingly complex scientific and technological information becoming available. Following the decisions adopted by the General Conference in Nairobi in 1976, UNISIST had become an integral part of the General Information Programme, which covered all the Organization's activities relating to information, libraries and archives. UNISIST now provided a general conceptual framework that could be applied to the whole range of knowledge and of world information resources.

13. Reminding the meeting that development issues had already been a matter of concern when UNISIST had first been conceived and established, he went on to say that its original goals had henceforward to be viewed in terms of the wider-ranging thought being given to development problems, particularly in connection with the concept of the new international economic order.

14. In his analysis of the flow and use of information, he said, firstly, that it was important to overcome the variety of obstacles that were liable to hinder the flow of information, since information, the product of the scientific and technological efforts made by the whole of mankind, was an essential resource to which all countries, and especially the developing countries, should have unimpeded access; and secondly, that consideration should be given to the way in which scientific and technological information fitted into the development process proper.

15. The more readily a society could obtain access to abundant and varied information, drawn from sources of world-wide scope, the freer it was to make choices suited to its own style of development and to the goals which it had set itself. It was essential that the information systems set up in the developing countries should be given freer access to all the scientific knowledge and know-how needed for progress, and that such information should be used to promote the generation and strengthening, in every State, of scientific and technological potential, which was the key factor in all endogenous development and in every country's capacity for innovation.

16. He then invited the participants to consider how far the establishment of UNISIST had met and was meeting the changing requirements of the Member States, to engage in a closer analysis of the role of scientific and technological information in endogenous development, and to refine the techniques for using such information for the achievement of specifically defined objectives. He also asked them to give thought to the effect on scientific and technological information of the rapid progress made by communication and information technology, and especially by informatics. The progress achieved had made it easier to set up universal systems which could improve the flow of information between countries with a high scientific potential and those where that potential was lower.

17. He stressed the importance of the discussions the Conference would be having on strategies for future action at the national, regional and international levels and of the recommendations to which they would give rise. At the national level, needs had to be identified and policies devised to meet those needs, information had to be used effectively and made more accessible, and advanced information technology had to be judiciously applied while obstacles to the free flow of information were systematically eliminated.

18. At the regional and international levels, Unesco intended to provide opportunities for participation in major programmes of intellectual co-operation in the scientific field in particular, and to act as a catalyst facilitating access to sources of scientific and technological information.

19. In conclusion, he reminded the meeting that UNISIST would henceforward be concerned with the social and economic value of scientific and technological information for the purposes of development, and that the recommendations of UNISIST II would be communicated, in an appropriate form, to the United Nations Conference on Science and Technology for Development, which was expected to devote special attention to the role of information. Those recommendations should make a real contribution to solving the problems of facilitating the flow of scientific and technological information, seeing that every country had unimpeded access to that information, and ensuring that the information was used and applied effectively for development purposes.

20. On the proposal of the delegation from Tunisia, seconded by delegates from India, Ecuador and China, Dr. Inês Wesley-Tanasković (Yugoslavia) was elected President of the Conference with warm acclamation from delegates.

21. Dr. Wesley-Tanasković thanked the participants for her election. She expressed the hope that, as at the first UNISIST Intergovernmental Conference, it would be possible to create a spirit of constructive collaboration and so reach a consensus on the questions to be discussed. In view of her earlier service as Chairman of the UNISIST Steering Committee and Vice-Chairman of the Intergovernmental Council for the General Information Programme, she saw her election as an indication of general satisfaction on the part of the participants with the accomplishments of the UNISIST programme. In her view, UNISIST continued to offer a unique framework for the development of the information activities of the United Nations system. She concluded her remarks by stressing the importance of the Conference making concrete recommendations which could help to increase the impact which scientific and technological information can make to solving development problems. It was also important to keep in mind the objective of communicating the results of the Conference to the UNCSTD Conference in August 1979.

22. Before submitting the Rules of Procedure for adoption, the President proposed the modification of the wording "one or more Vice-Presidents" in Rule 3 to "10 Vice-Presidents".

23. Concerning Rule 1 on chief participants, the delegation from the USSR said that, although the invitations to the Conference had been established by the Executive Board at its 106th session, it wished to see reflected in the report the reservations of that country concerning the credentials of some countries invited to the Conference.

24. Following the adoption of the Rules of Procedure and the agenda, the following were elected as Vice-Presidents:

Dr. Patricio Palacios Cevallos	Ecuador
Mr. Melvin S. Day	United States of America
Mr. Maheshwar Dayal	India
Dr. Hatif Al-Jalil	Iraq
Mr. Henry Fowler	Jamaica
H.E. Datuk Haji Lokman Bin Musa	Malaysia
Mr. M.K.S. Mvaa	United Republic of Tanzania
H.E. Dr. N'Sougan Agblemagnon	Togo
H.E. Mr. Mustapha Masmoudi	Tunisia
Mr. N.B. Arutjunov	Union of Soviet Socialist Republics

25. Mr. John Gray (United Kingdom) was elected Rapporteur-General by acclamation.

26. Introducing point 6 on the agenda, Scientific and Technological Information for Development, the President invited Professor C. de Jager, President of the International Council of Scientific Unions, to open the discussion in view of the important role that ICSU had played in the planning and execution of UNISIST.

27. Professor de Jager recalled the close collaboration between Unesco and ICSU in the study of the feasibility of UNISIST which served as a basis for the 1971 UNISIST Intergovernmental Conference. He noted that the decisions taken following that Conference had been justified by the progress made. He foresaw that the original UNISIST principles would continue to be relevant for the future although increased attention would necessarily be given to particular areas and he advised that emphasis on improving access to scientific and technological information should continue.

28. Professor de Jager underlined the importance for the scientific and technological communities of rapid access to reliable and relevant information in which meetings, invisible colleges and, more recently, computerized information services, perform significant roles. These roles, however, are complementary to the continuing importance of documentation centres, libraries and archives.

29. After reviewing the active participation of various bodies of ICSU in the development of UNISIST, Professor de Jager pledged the continuing support of ICSU in continuing and extending the UNISIST activities. In conclusion, and with reference to a recent consultation with a number of non-governmental organizations, he expressed the opinion that Unesco remained the most appropriate organization for continuing work in developing scientific and technological information activities.

30. The President then invited Mr. J. F. da Costa, Secretary-General of the United Nations Conference on Science and Technology for Development (UNCSTD) to speak in view of the links which exist between UNISIST and the UNCSTD Conference.

31. In his address to the delegates, Mr. da Costa emphasized Unesco's vital role in UNCSTD and the important contribution that UNISIST II could make. He stressed three major developments that had occurred since UNISIST I: the affirmation of a new economic order, based on justice and the correction of imbalances; the new orientation of the United Nations system toward development objectives; and the new broader conception of development itself that had emerged.

32. He defined a number of characteristics of this new concept of development: it should be total, original, self-determined and endogenous. It should promote co-operation; it must be consistent, coherent and integrated. It should respect the integrity of the total environment, and it should be planned and should involve the active participation of governmental authorities. It must be founded on justice and an equitable social order. It must be democratic, yet also competitive and innovative; and it should be based on a realistic definition of national roles. He saw many of these characteristics in the development of the UNISIST programme, and indicated that these would be the interfaces between UNISIST II and UNCSTD.

33. In further business of an administrative character, the Conference Steering Committee, consisting of the President, the Vice-Presidents and the Rapporteur-General met between the morning and afternoon sessions of the first day to consider:

(a) the work plan and timetable of the Conference;

(b) the setting-up of a drafting committee to be responsible for harmonizing such resolutions as might be submitted by national delegations;

(c) the preparation of the report.

34. During the afternoon session the Conference agreed on the work plan and timetable recommended by the Steering Committee.

35. On Tuesday, the Conference appointed, on the recommendations of the Steering Committee, the members of a drafting committee composed of the President and Rapporteur-General of the Conference (ex officio), Mr. Djamil Benbouzid (Algeria), Dr. R. Gietz (Argentina), Dr. J. Michel (France), H.E. Mr. J. Ping (Gabon), Miss Luwarsih Pringgoadisurjo (Indonesia) and Mr. A. Wysocki (Poland).

Achievements since the UNISIST Intergovernmental Conference of 1971: A Review

36. Almost all delegates who spoke congratulated the Secretariat on the high quality of the Main Working Document and the supporting papers. They regarded the presentation of issues as clear and challenging, and felt that a conference so prepared was certain to make a significant impact on both the future programme of Unesco and the discussions on information problems at the United Nations Conference on Science and Technology for Development (UNCSTD) in August 1979.

37. There was general satisfaction with the clear, honest and self-critical tone of Part A of the Main Working Document. Most delegates who spoke felt that the UNISIST programme had been a pioneering venture and an encouraging success. Congratulations were due to all concerned. The time was ripe for a review of progress made since the first UNISIST Conference of 1971, and in general the programme had stood up well to a critical evaluation. The original recommendations of the 1971 Conference had been sound and were still relevant to the largely changed economic and social conditions of today. Much had been achieved under each of the subobjectives of the programme, but there was still a great deal more to be achieved because many countries, especially the less developed ones, still had to develop coherent national policies, set up and co-ordinate the necessary information infrastructures, and establish systematic programmes for education and training of professional information workers and of final users of information, who now range from economic planners to "grass roots" workers in local communities.

38. The theme of Part B of the Main Working Document, "The Flow and Utilization of Scientific and Technological Information and its Role in Development", much influenced discussion of Part A. Several Member States, especially those from developing countries, saw an inevitable transformation of the UNISIST programme from one primarily concerned with scientific and technological information for its own sake to one concerned with the use of this information, along with economic, social, cultural and managerial information, as an essential but increasingly complex

tool in the broad process of national development. UNISIST was seen to be a leading international programme in this wider context, as well as in the original context, provided its science content was not reduced. Its role was well recognized - inside and outside the United Nations family - and the main problems, in planning for its future, were how to change course in order to meet the new, wider objectives while retaining the essential, beneficial elements of the original programme. In particular, as one delegate put it, the need was to provide better access to information needed for development, to manage better the handling of information and to ensure better use of the resources so provided and managed. There was wide satisfaction with Unesco's decision to extend UNISIST principles to the social sciences; one delegate felt that less progress had been made here than in the natural sciences. However, another delegate drew attention to the growth of regional co-operation in Europe under the aegis of what is known as the Vienna Centre and felt that Unesco's efforts might develop effectively in future in co-operation with the International Social Science Council.

39. All four subobjectives of the UNISIST programme received substantial support from individual Member States. Education and training of professionals and users was mentioned by almost every speaker - with constant emphasis on the importance of providing a supply of trained personnel to staff the policy organizations and the systems and services within Member States, and (equally important) of educating the users of information to make effective utilization of information services, no matter what their user functions might be. One delegate spoke of the need for more Unesco fellowships.

40. Several speakers made significant points about the importance of Unesco's information policy activities and of those concerned with the building of information infrastructures, i.e. systems and services. They placed special emphasis on the need for national focal points to supply Unesco with information on their needs. Several delegates also laid particular emphasis on the value of guidelines on national information policy and three suggested that they should be rewritten to meet the changing requirements of Member States. However, speakers felt strongly that these guidelines should be seen as advice, and not commands. The circumstances of Member States differ widely and no set of guidelines, however good, can have general application.

41. It became clear that there is a fundamental relationship between these two subobjectives - policies and infrastructures. Creation of infrastructures is only straightforward within a properly conceived national policy framework but national policy, in so far as it means co-ordination of effort, becomes meaningful only when there are significant infrastructures to co-ordinate. The application of computer techniques was a concern to many delegates, one of whom expressed particular appreciation of a UNISIST experiment in his country with computerized dissemination and searching services. But another delegate emphasized the importance of personal contact in the transfer of "know-how". Several delegates felt that, in the past, the emphasis had been on bibliographic information services; now more emphasis was needed on factual, evaluatory and repackaging services. One delegate asked for an evaluation of UNISIST work in this field.

42. Finally, two countries stressed the importance of UNISIST attempts to promote, and secure action on, norms and standards for information and library procedures. One delegate gave particular emphasis to the value of guidelines already issued but urged that particular emphasis should now be placed on the application of standards in developing countries.

43. The views of developing countries on the character and amounts of technical assistance they expected from UNISIST varied considerably. One noted the need, for example, for a broad spectrum of assistance, ranging from studies of the long- and short-range needs to the promotion of national services and centres. A second country, however, stated that there should be a division of labour, with Unesco concentrating on the provision of expert consultants and on assistance in setting up national focal points, and other organizations being responsible for conferences and seminars of various kinds.

44. A good deal of discussion centred on the emphasis in the UNISIST programme on regional policies and structures. Member States in general believed that international co-operation is essential to the systematic development and use of information systems in Member States. This co-operation may be between developed countries, between developing countries, or between developed and developing countries. However, co-operation is not an easy solution to a problem. The size of area is important, a subregion sometimes being more appropriate than a geographical region. Also geography is not always the dominant feature of a region; language can be more important, since co-operation can be easier among countries sharing the same language. Finally, common economic, social or cultural problems can offer a good basis for co-operation.

45. Several delegates cited the broad programme of co-operative activities developed by countries sharing a common political system as a good example of a co-operative network drawing on the UNISIST philosophy. One representative of a geographical region which had acquired considerable experience in resource sharing and regional training programmes provided a realistic account of problems still to be resolved within his region.

46. Two Member States drew particular attention to the fact that Unesco, with its present resources, could not achieve all legitimate aims in a short period - and, indeed, had difficulty in supporting some projects to a successful conclusion. It was therefore necessary to concentrate the programme on priorities, though both delegates realized that this is a difficult task. Given the need to continue with the existing UNISIST programme, the scope for new projects was limited, and these projects should be worked out carefully, to meet the defined needs of Member States. Three delegates cautioned against the setting up of another information system or network, two preferring to strengthen the existing UNISIST programme and another to concentrate efforts on the harmonizing of activities at the national level.

47. Three speakers emphasized the importance of improving access to published literature and two specifically mentioned the Universal Availability of Publications programme in this connection. Another speaker supported Unesco's work on centres disseminating information to professional workers, but felt that progress with them had been uneven. There had also been little progress in removing obstacles to the flow of information. Unesco received general encouragement from delegates to work closely with other United Nations agencies on matters of mutual concern and to link its activities with the development plans of Member States. In addition several countries urged that UNISIST should maintain its liaison with the world's scientific and engineering communities, arguing that science and technology provided underpinning for the new international economic order. Some of them urged strengthening the collaboration between the General Information Programme and the Science Programme of Unesco.

48. A number of countries drew attention to the part that they had played in the organization of UNISIST - in the Steering Committee or (more recently) the Intergovernmental Council, in individual projects forming part of the UNISIST programme, and in the sectoral systems of the United Nations family. They also gave examples of the application of UNISIST ideas to their national or regional problems, in particular to the development of national policies and infrastructures. One delegate mentioned a particularly interesting reaction to UNISIST - an agreement by 19 non-aligned countries to set up a network for the exchange of information between them. Another spoke with appreciation of the UNDP funds provided through Unesco for the development of a mechanized information system. A third spoke appreciatively of similar support for the creation of a basic course in information for South-East Asia. All countries that spoke of their experience said they were ready to share this experience with other countries. A fourth delegate circulated a brochure describing in detail how his country had followed UNISIST guidelines and precepts in developing its national services, especially those utilizing new technology.

49. Several delegates attached particular importance to the impact Unesco made on interested bodies in Member States. Definite achievements and helpful assistance could do much to build an effective response to the programme. As one delegate put it - example is better than precept. There was a plea for better two-way communication between Unesco and Member States, one delegate suggesting ways in which Unesco might improve its outward communications and some Member States might improve their handling of Unesco communications.

50. At the end of the session, the representatives of four United Nations organizations, the Inter-Organization Board for Information Systems (IOB), the United Nations Industrial Development Organization (UNIDO), the World Intellectual Property Organization (WIPO), and the United Nations Environment Programme (UNEP), described the information activities of their respective organizations, their working relations with Unesco and their use of UNISIST principles. The UNIDO representative made a special reference to the successful completion of a project setting up an industrial information bank. IOB made particular reference to interest in developing the use of UNISIST-generated norms and standards within the United Nations family. UNEP's information referral system, Infoterra, was later demonstrated to delegates.

51. The representatives of one intergovernmental organization, the International Centre for Scientific and Technical Information (ICSTI), and two non-governmental organizations, the International Federation of Library Associations and Institutions (IFLA) and the International Organization for Standardization (ISO), also made statements.

52. To sum up, delegates felt that the UNISIST programme had made considerable achievements, and that, as one delegate put it, the benefits had justified the costs. However, there was an urgent need to adjust the programme to emerging objectives related to development programmes.

The flow and utilization of scientific and technological information and its role in development

53. The Conference found Part B of the Main Working Document to be a good stimulus to discussion, though some delegates thought that there should be more emphasis on patents as a source of information, and one delegate urged the presentation of the argument of Part B in a simple form which could convince economic planners and those who made decisions on information policy.

54. The role of scientific and technological information in development was viewed by many delegates as a major factor in determining future activities within the United Nations family. There was general recognition of the timeliness of the UNISIST II Conference. Coming three months before UNCSTD, it could provide a significant input to UNCSTD discussions on information problems in economic and social development. Scientific and technological information, and other types of information needed for purposes of development, were seen to be essential to the whole process of development. This approach led speakers to several conclusions:

1. Information is an international resource and published information, together with that which can be readily published, should be freely available to all users in all countries.

2. National structures must be strengthened to the point where they are capable of receiving and handling information and promoting its effective utilization; the cost of doing this was relatively high in the smaller and less developed countries, if they were to achieve a basic minimum of service and one delegate stressed the need for information services to be cost-effective.

3. National information policies should be developed at a suitably high level, so as to promote both maximum awareness and utilization of existing universal information systems and the creation or improvement of local sources of information, which are essential to the development process.

4. For this purpose, information derived from science and technology should be defined widely, to include not just bibliographic information but data banks, patents and other sources of factual, and when appropriate, evaluated, information.

5. Increased emphasis should be placed on the repackaging of information in appropriate forms and in the local languages for the many different kinds of user in development activities.

6. The circumstances of each country are specific in nature and it is unwise to introduce a model information system from outside without due consideration of national circumstances.

7. The UNISIST programme, on both its achievements and its prospects, is particularly well fitted to stimulate and support the promotion of developments outlined above.

55. Several delegates drew attention to the importance of world peace, détente and disarmament in creating conditions essential to the success of international co-operation, notably in the field of scientific and technological information.

56. There was among delegates, especially those from developing countries, a recognition of the important role of information in the UNCSTD Conference, which Mr. Da Costa's speech had made clear, and of the important part that Unesco could play in following up the recommendations of that Conference. Thinking in UNCSTD, it was argued, should be built on foundations laid by UNISIST, which should remain the focus of future activities in this field. The aims of UNCSTD could well be reached by reorienting the already successful UNISIST programme. Several countries made clear their opposition to the creation of a new information agency within the United Nations. This Conference, therefore, should make a significant input to UNCSTD and so help promote a constructive discussion of information issues.

57. One delegate pointed out that many of the problems of mankind are international, e.g. environmental protection, energy, the resources of the ocean. It was therefore important for each country to analyse its national resources of information and make them widely available. Any UNISIST project should be aimed at solving problems of development.

58. Several delegates recognized UNISIST work as being an essential contribution to the new international economic order and some of them thought it should be directed to the new world information order as well. Another went so far as to advocate a new international technology order, to facilitate the application of modern technology. The economic imbalance between developed and developing countries was seen to be as marked in the information field as in others, the latter being mainly users of information though a few do produce it as well. The new international

economic order provided a broad framework within which Unesco could help to reduce or remove the imbalance, to make for greater equality between countries in the distribution and effective use of information. The possibilities thus opened up were very great, but would only be realized in the long run. To realize them, individual countries had to build up national information structures capable of assessing the world's store of information and of adding to that store home-produced information which was essential to successful development in local conditions. One delegate listed the various questions which had to be asked in the making of a national information policy and in making a transition from traditional approaches to modern ones involving new technology.

59. Equally, there had to be ready co-operation between countries - not only between developed and developing, to increase access to universal systems of information, but among developing countries themselves, especially those with similar problems of development. Several delegates drew attention to the growth of such co-operation and saw a UNISIST role in promoting and assisting it. It could be particularly useful in securing wide application of intermediate technology.

60. A recurring feature of contributions from developing countries was the need to promote an unrestricted flow to all users of published information and that which can be readily published. Some delegates saw this as a one-way flow - from universal sources of information in developed countries to users in developing countries. Others saw the situation as more complex - one in which information needed to flow between developing countries, especially those that could help each other, and could certainly flow, with advantage, from developing to developed countries. Two delegates emphasized the importance of including information from all countries in universal information services. However, one developed country pointed out that in some countries information is disseminated by private organizations whose policies are not subject to government control.

61. A number of countries took advantage of the suggestion in the Executive Summary of the Main Working Document (paragraph 45) that discussions "should mainly centre on the experience of Member States, at various stages of development". Several countries described attempts being made to set up suitable organizations for information policy-making, usually within a new or well established ministry for science or research. Other countries showed how they had tried to deal with specific information problems or to create all-purpose national information systems. One delegate spoke of the creation in his country of a national information system based on co-operation between a number of sectoral services. Other countries mentioned experiments with on-line information retrieval services, designed to promote effective use of such services as they become established. One developing country, with experience of running suminars on approaches to, and applications of, new technology, offered to host an international seminar on this theme within the UNISIST programme. Of particular interest to a world audience were the experiences of one region in developing a potentially universal system for handling social sciences information; the ready availability in one country of a literature-supply service which was already used by more than 70 developing countries; the experience of a third country in establishing a successful extension service for small enterprises; and finally the news from a delegate of an experiment with a problem-oriented information system aimed to help managers in decision-making.

62. At the end of the session, the representative of ICSU made a statement drawing attention to the need to consider in detail the problem of incentives - both to produce and disseminate information and to use it when available.

Strategies for future action at the national, regional and international levels

63. Virtually everyone who spoke on this subject found Part C of the Main Working Document a comprehensive and helpful basis for discussion. Very few criticisms were made of the many actions proposed and in general they were of a minor nature. The discussion, therefore, was mainly an amplification of the strategy outlined in the document. However, several delegates drew the obvious lesson that Unesco, with its limited resources, would need to establish priorities among the new and continuing elements of the programme, concentrating on those activities that it was able to conduct most successfully. They proposed that the Intergovernmental Council for the General Information Programme should make a manageable number of priority proposals at its Second Session in November 1979, which could help the Director-General and the General Conference shape the Programme and Budget for 1981-1983. Two delegates thought a "systems" approach, aimed at making optimum use of available resources, could be helpful. Another delegate observed that the addition of new emphases to the programme, e.g. promotion of use and applications of information technology, would have implications for the distribution of staff resources within Unesco.

64. Many speakers confined their remarks to identification of broad areas of priority and did not comment on the detailed approaches to priority areas. While accepting the need for new emphases, in order to establish the role of information in development, these speakers showed particular concern for the continuing objectives of the programme, in particular the creation of national and regional infrastructures within an appropriate policy framework and the education and training of professionals to man the structures and of users to make effective use of the services. There was wide agreement that building up national ability to generate, handle, disseminate and retrieve information was a paramount task of Unesco, since without such ability other activities, such as improving the flow and use of information, would be impossible. But in this area, as in others, Unesco could only act as a catalyst - by means of well chosen activities. Its success would depend on Member States freely accepting their share of responsibility, especially in the provision of finance and personnel for continuing operations. As one delegate said, there must be a willingness to take, and sustain, effective action; or as another said, self-reliance must be a primary aim.

65. There was reinforcement in the discussion of the previously expressed view that political, economic, social and cultural conditions vary so much from country to country that general advice on how to develop information policy and structures can only be of indicative value. In particular, as several countries emphasized, the experience of developed countries was not necessarily relevant to developing countries. Several delegates drew attention to the need for decentralization of information activities (albeit with some form of central co-ordination) and one delegate believed that it had the advantage of promoting healthy competition in quality of service. However, speakers felt that the UNISIST guidelines on policy and planning served a useful purpose and agreed that they should be rewritten - as advice not commands. Several of them were particularly interested in the administrative level at which policy-making and co-ordination should be handled.

66. One delegate laid emphasis on the phasing of infrastructures development. The process of developing a national infrastructure should involve identification of priority areas, so that efforts would be concentrated on these. In his country effort was being concentrated on a structure for agricultural information, which is a top priority area. Two other major areas of priority are medicine and science and technology.

67. Discussion about infrastructures was much influenced by a general acceptance of the greater emphasis on users - their needs, their education, and their motivation - that was proposed in Part C of the document. Delegates discerned a wide variety of users engaged in the development process and advocated the design and supply of tailor-made services to meet their various needs. In general their needs implied the selection and evaluation of information contained in the literature and the presentation of it in forms suitable for defined audiences. They also implied the creation of extension services to convey this repackaged information to technically unqualified users both at the higher levels of policy-making and planning and at the "grass roots" of development in rural and other small enterprises. One delegate placed particular importance on information analysis centres and on the provision of reliable scientific data, as in the ICSU/CODATA programme which had received and, in his view, should continue to receive Unesco support.

68. Unesco's role was viewed as providing advice and encouragement to countries in need of help through a variety of means - guidelines, seminars, direct aid, etc. The relationship between Unesco and Member States was seen as one of partnership and one which would exist over a long period of time. As one delegate put it, information structures tended at first to be fragile and the Member States concerned needed assistance in consolidating and building on these structures. Delegates thought mainly in terms of documentation and other information services; but some emphasized also the role of libraries and archives, particularly the services that public libraries could provide for rural development.

69. Discussion on professional education and training activities added little to what had been said earlier in the Conference. However, accounts of national experiences suggested the need for variety and flexibility in Unesco's approach to the subject and one delegate urged that educational programmes should be based on analysis of need. There was a plea for more information on available courses and educational aids, and another plea for special training for special forms of services, such as evaluatory and repackaging services. Continued feedback on Unesco's experiments with courses was necessary.

70. The most significant points in the discussion were the constant stress on the importance of Unesco's work in the field and the fundamental relationship between education/training and the proper functioning of any information system or service. However, some speakers did draw attention to two serious and related problems in developing countries - the "brain drain" of

trained information specialists to other forms of employment and the consequent need to raise the (usually low) status of information workers.

71. Education and training of users were also discussed in a fairly general way. One delegate suggested that in future Unesco's approach should be pragmatic, seeking to establish courses and demonstrations designed to meet the needs of particular users. Another stressed the need for flexibility in the approach to training, because of the wide range of users concerned. A third considered the subject so important as to be worth making the theme of the next UNISIST seminar on policy and planning problems.

72. There was general support for the proposals in Part C concerning application of new information technology, which were seen to be realistic. Delegates were generally aware of the influence that on-line information services and even more advanced applications of technology could exercise on thinking about information services. However, as one developed country pointed out, on-line services provided benefits mainly to institutions of considerable size, and this fact much affected their helpfulness to small, least-developed countries. It was clearly useful, as individual delegates suggested, for Unesco to explain clearly to developing countries what new technology could, and could not, do for them and to back this up with further demonstration of services based on new technology - since demonstrations were an excellent form of user education. All applications of technology should be related to the real needs of individual countries.

73. These needs included, of course, cheap access to on-line services and more than one delegate asked how this was going to be ensured, since long-distance telephone costs were at present prohibitive. This problem clearly concerned the telecommunications authorities, which were responsible for links between countries, and two delegates suggested that these authorities should be brought into UNISIST discussions. One of them felt that these authorities should be called upon to give preferential attention to data communication and to consider reducing tariffs for this kind of service. He also felt that the data bank owners should consider reducing rates to developing countries for accessing their data banks.

74. Several delegates indicated clearly that the application of new technology accentuated the importance of Unesco's work on norms and standards. One, in particular, stressed the need to achieve compatibility between national and regional systems. Others laid emphasis on the need for automated translation systems.

75. One delegate perceived that the introduction of new technology would require new forms of training, especially for those intermediaries who would have to provide access to on-line systems through local terminals. Training was important because the cost of these services depended to a large extent on the speed and efficiency (and therefore cost) of information searches.

76. A number of delegates directed their remarks to problems of access to information. Many of them asserted that there were definite restrictions in the availability of information from developed countries and one suggested that Unesco might sponsor a study to identify precisely what restrictions existed and how they operated. Other delegates expressed interest in the arrangements that already existed, for the rapid supply of published documents. Some delegates felt that Unesco should design a code of practice, or some other guidelines, for the release of information needed by developing countries. Other delegates asserted the need of each country to safeguard its national interests, and one delegate repeated a previous statement - that in some countries many sources of information were private, and not subject to government control. Yet another delegate suggested a strategy for the study and elimination of obstacles to the flow of information. In any case, as one delegate emphasized, demand was often unsatisfied, not because of failure of access, but because of a surfeit of information, which could not be properly sifted and analysed. Additional support was given, in this session, for the IFLA programme of Universal Availability of Publications, supported by Unesco.

77. Other points made by delegates were as follows:

A close study needed to be made of the relationship between Unesco's General Information Programme and the information projects in the subject sectors of Unesco.

Unesco should continue to sponsor projects which promoted exchange of experiences (e.g. on national plans and projects), or other forms of co-operation between countries in specific regions or subregions.

As part of this activity UNISIST should continue to arrange regional seminars, especially among countries with related economies, cultures and languages and should support the

creation of information networks among these countries; this work should include the holding of workshops and the supply of local and other experts.

A special effort should be made to strengthen links between STI policies and science and development policies in individual countries.

Unesco should consider the establishment of machinery for professional advice on the establishment of information services of various kinds.

It should also supply "trend reports" on new developments and influences and on the progress of projects - including failures.

The possibility of films as a means of communicating such information, should be explored.

Means should be devised for the global evaluation and the measurement of performance in information systems and services, and for the evaluation of education and training programmes.

More effective interaction should be created between Unesco, the National Commissions for Unesco and national focal points, and more attention should be given to the circulation of Unesco documents within countries.

Unesco should undertake or encourage a feasibility study of the methods best suited to a qualitative and quantitative inventory of the secondary literature; for this purpose work already done such as the FID inventory should be taken into account.

It should also support lesser known organizations concerned with information problems, e.g. the International Institute for Aerial Survey and Earth Sciences (Unesco Centre for Integrated Surveys), which would be holding a symposium on information needs for development in January 1980; and the International Translation Centre, which provided information on translations especially from the less well known languages.

Unesco should attempt to analyse and synthesize the results of past and present studies of national information requirements, since the outcome might be of more use than support of entirely new studies.

Referral centres needed to be encouraged, as an essential part of national information networks; but they must be capable of interpreting information for different types of user.

78. The role of Unesco could be summarized, in the words of one delegate, as mobilizing "seed" money or "pump priming" money for the creation of policies structures and systems, and for other activities in countries at different stages of development, so as to lead them to the point where their progress could become self-generating. This role implies a broad range of activities but, given limited resources, it also implies a strict identification of priorities for action. In according priorities, Unesco needed to strike a balance between the continuing objectives of its programme and the new emphasis, especially user orientation and application of new technology, that were set out in Part C of the Main Working Document.

79. After all delegates had spoken, the United Nations Food and Agriculture Organization made a statement on its information activities, including the AGRIS and CARIS systems and three non-governmental organizations also made statements. The representative of the International Federation for Documentation expressed appreciation of both the working documents and the way in which non-governmental organizations had been consulted during the preparation of the Conference. The representative of the International Council on Archives gave support to the current programme, especially the part concerned with the development and use of archives. Finally, the representative of the International Group of Scientific, Technical and Medical Publishers made a statement regretting the lack of a reference to authors and publishers in the Main Working Document and requesting that, in future, UNISIST should work with these groups as it already did with organizations representing information handling and user interests.

80. Winding up the session the Assistant Director-General for Studies and Programming expressed appreciation of the high quality of the discussion, thanked delegates for their favourable comments on the Main Working Document and for their expression of belief in the future of UNISIST, acknowledged the help received from various quarters in preparing the document, and summarized what he considered to be the main points made in discussion, e.g. the importance of a ready flow of information, the need for a more user-oriented programme, and the place of evaluation and repackaging in information services. He said that the Secretariat had taken note

of the many helpful suggestions made by delegates and was conscious of the need to concentrate resources on priority items in preparing the future programme. The Conference had offered a clear expression of views to UNCSTD, which would undoubtedly benefit the discussions there.

Closing session

81. The Rapporteur-General introduced the draft report of the Conference, expressing appreciation of the assistance that he had received and reading out a few amendments already submitted. At the suggestion of the President the Conference agreed that it would confine itself to amendments of substance and submit minor points directly to the Secretariat.

82. It also agreed, in view of the withdrawal of one draft recommendation, to note in the report that its attention had been drawn by several delegates to the role of the Centre for the Co-ordination of Social Science Research and Documentation in Africa South of the Sahara (CERDAS) at the regional and subregional levels and on the need for increased efforts in its favour.

83. The Conference then considered the draft report in detail and after amendment adopted it unanimously.

84. The President of the Conference then invited the delegates to consider the texts of three draft recommendations prepared by the drafting committee which were based on the eleven draft recommendations which had been submitted by single delegations and groups of delegations. The three draft recommendations concerned respectively a message which the Director-General was to be invited to call to the attention of the UNCSTD Conference and its Preparatory Committee and composite recommendations addressed to Member States of Unesco and to Unesco itself.

85. In connection with the recommendation to Member States the delegation of China requested that the fact that it felt reservations concerning the second Conference of Ministers Responsible for Science and Technology Policy in the European and North American Region (MINESPOL II) to which reference is made, be recorded in the report.

86. After consideration and amendment each of the three recommendations was adopted unanimously.

87. Taking leave of the delegates to the Conference, the Director-General observed that UNISIST II had been an occasion for wide-ranging discussion of the problems of scientific and technological information, and that it had provided Unesco with a collection of views and proposals put forward at a timely moment on the eve of the United Nations Conference on Science and Technology for Development, which was to frame an international strategy for the Third United Nations Development Decade.

88. He spoke of the breadth of the field covered by scientific and technological information and the diversity of the sources of information. He stated that one could not advocate a completely free flow of news and at the same time restrict access to scientific and technological information.

89. He stressed that the political will of States was necessary in order to create the appropriate national infrastructures and systems to facilitate the circulation of scientific and technological information, and that it was important to overcome the economic, legislative and administrative obstacles that might impede the flow of such information. He observed that the discussions on the transformation of information into knowledge, i.e. its effective utilization, had highlighted the need to develop a strategy geared to users in all categories. In order to achieve this, the consolidation and repackaging of information should be given priority, as should appropriate training for users.

90. The Director-General welcomed the fact that the Conference had reaffirmed the initial objectives of UNISIST, emphasized the importance of the intercommunication of systems and confirmed the overall conception of information transfer on which UNISIST was based, as a flexible and decentralized system operating through the voluntary co-operation of information systems and services scattered throughout the various countries.

91. In conclusion, he expressed the opinion that the recommendations formulated by UNISIST II would facilitate the work of the Intergovernmental Council for the General Information Programme and that, thanks to those recommendations, he would be able to submit to the General Conference in 1980 a programme in harmony with the views of Member States. Not only did the UNISIST II Conference have a message to convey to the United Nations Conference on Science and Technology for Development, but it had shown that UNISIST was indeed the most fitting instrument to implement the Vienna recommendations in the field of scientific and technological information, and that it was not necessary to set up new machinery which would inevitably lead to duplication.

92. Dr. Wesley-Tanasković then closed the Conference after expressing thanks to the Director-General of Unesco, to Members of the Steering Committee to the delegates and to members of the Secretariat for their important contributions to its success.

II. RECOMMENDATIONS

Recommendation No. 1 - addressed to UNCSTD

The Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II),

Having taken into full account the goals and objectives of the United Nations Conference for Science and Technology for Development (UNCSTD),

Recalling resolution 3362 (S-VII) on development and international economic co-operation adopted by the United Nations General Assembly, at its seventh special session; resolution 3507 (XXX) concerning institutional arrangements in the field of the transfer of technology adopted by the General Assembly, at its thirtieth session; resolution 1902 (LVII) of the Economic and Social Council concerning "the role of an international technological information system in the transfer and assessment of technology and in the indigenous growth of appropriate technologies in developing countries",

Recalling that the Committee on Science and Technology for Development (CSTD) of ECOSOC adopted at its third session resolution A whereby it recognized "the results already achieved by the Intergovernmental Programme for Co-operation in the field of scientific and technological information (UNISIST) of the United Nations Educational, Scientific and Cultural Organization, specially in providing a useful conceptual framework for the development of information systems",

Recalling further that the Secretary-General of the United Nations, in his report (E/5839) submitted on behalf of the Administrative Committee on Co-ordination through the Economic and Social Council, at its sixty-first session, to the General Assembly, described UNISIST as the information programme of a general nature within the United Nations system, "designed to provide a conceptual framework for the establishment of national and international scientific and technological information systems and services to facilitate access to the world information resources and to create the necessary conditions for systems interconnection and compatibility",

Recognizing and appreciating the considerable efforts of building up and running mission- and discipline-oriented specialized information systems and services for the benefit of Member States by the organizations of the United Nations system, in particular, the United Nations, UNEP, UNIDO, IAEA, ILO, FAO, WHO and ITU,

Appreciating further the important work undertaken by the Inter-Organization Board for Information Systems (IOB) in harmonizing the information systems of the United Nations family,

Recalling resolution 19 C/5.1 of the Unesco General Conference at its nineteenth session, which "instructs the Director-General to take the necessary measures to ensure that the General Information Programme, particularly through the development of projects begun under the UNISIST programme, provides a conceptual framework for information systems devised by the agencies of the United Nations and in particular for Unesco's information activities as a whole",

Recalling that Unesco, in fulfilment of Objective 10.1 of its Medium-Term Plan for 1977-1982 - Development and promotion of information systems and services at the national, regional and international levels - carries out work under five themes:

promotion of the formulation of information policies and plans (national, regional and international);

promotion and dissemination of methods, norms and standards for information handling;

contribution to the development of information infrastructures;

contribution to the development of specialized information systems in the fields of education, culture and communication, and the natural and social sciences;

promotion of the training and education of specialists in and users of information;

Recommends that the United Nations Conference on Science and Technology for Development (UNCSTD), pay special attention to the following:

(a) scientific and technological information is a national and international resource; the progress of science and technology depends to a large extent upon access to and effective utilization of this resource; and together with economic, social and cultural information, it constitutes a major factor for accelerating the development process;

(b) all countries have the same right to full access to the resources of scientific and technological information that are published or could readily be published and need the necessary means to adapt, utilize and absorb this information to serve their development;

(c) all countries should elaborate national scientific and technological information policies and plans, as an essential and inseparable part of national policies for scientific, technical, cultural, economic and social development, to stimulate and harmonize the setting up of national information systems and/or networks;

(d) national information systems and networks need for their development trained specialized manpower; infrastructures including communication facilities, data banks, libraries, documentation centres, archives, back-up literature, hardward and software; and the necessary information-handling procedures and techniques, tools, methods, norms and standards;

(e) national information systems and networks should aim to ensure access to, and facilitate utilization of, scientific and technological information from national and international sources in order to stimulate endogenous development and national capacity for innovation and to support the assessment, transfer and adaptation of technology;

(f) given that national and international information services and systems develop in a compatible fashion, it will be technically feasible to establish, gradually and stepwise, flexible, co-operative international networks of information systems and services for the exchange of scientific and technological information;

(g) the establishment of these networks will necessitate substantial resources and will need to be sustained by a continuous effort of goodwill and collaboration among nations and international systems;

(h) the creation, maintenance, and development of national information infrastructures in developing countries necessitate large financial assistance without which it would be impossible to achieve these objectives in a satisfactory manner;

(i) UNISIST, as an existing, unique and dynamic programme, should play a central role in the new activities relating to scientific and technological information, with due support from Unesco's closely related sectors covering the natural and social sciences, education and communication;

(j) Unesco, through the UNISIST programme, and collaborating very closely with its Member States, with the organizations of the United Nations system, in which its programme occupies a special position, and with other intergovernmental and international non-governmental organizations has been the lead United Nations Agency to work towards the establishment of an internationally flexible network of information systems and services based on voluntary co-operation;

(k) the recommendations of the UNISIST II Conference, having taken into full account the objectives of UNCSTD, have set the basis for further strengthening the relevance of UNISIST, and Unesco's future action in general, to the goals of national socio-economic development and the establishment of the new international economic order;

Therefore recommends that UNCSTD, when elaborating guidelines for future action to be undertaken by the United Nations organizations on scientific and technical information, should take full advantage of the considerable experience accumulated primarily by Unesco through UNISIST, and also by other United Nations agencies in operating their respective specialized information systems and services within the conceptual framework of UNISIST, and should avoid the creation of new programmes and structures within the United Nations system which could duplicate the work of existing agencies;

Recommends to the Director-General of Unesco that he submit this recommendation and the results of the UNISIST II Conference to the attention of the United Nations Conference on Science and Technology for Development (UNCSTD) which will meet in Vienna, Austria, from 20 to 31 August 1979, and to its Preparatory Committee at its fifth session in June.

Recommendation No. 2 - addressed to Member States

The Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II),

Desiring to make its contribution to the strengthening of peace and mutual understanding between peoples and to promote social progress and the utilization of the achievements of the scientific and technological revolution in the interests of the peoples of all countries,

Bearing in mind the decision of the twentieth session of the General Conference of Unesco (resolution 5/10.1/1) concerning the convening in 1979 of an Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II) for the purpose of reviewing the work done since the first UNISIST Intergovernmental Conference in 1971, examining the role of scientific and technological information in the development process and formulating recommendations for the future activities of Unesco and of its Member States at the national, regional and international levels,

Considering the widespread recognition of the UNISIST programme and principles as a conceptual basis for regional and international co-operation relating to the transmission, utilization and exchange of information in the natural and social sciences,

Emphasizing the decisions of the first Intergovernmental Conference for the Establishment of a World Science Information System (UNISIST), held in Paris from 4 to 9 October 1971,

Taking account of the recommendations of international conferences such as the Conference on Security and Co-operation in Europe and the second Conference of Ministers Responsible for Science and Technology Policy in the European and North American Region (MINESPOL II),

Taking into consideration the vast amount and variety of sources of scientific and technological information at the global level, in developing as well as industrialized countries, much of which can contribute to socio-economic and cultural development of all countries,

Realizing that a basic problem facing all countries, industrialized as well as developing, is the informed selection of relevant information from this global reservoir and its effective application for specific development purposes; and further realizing that the processes of identification, selection, organization, management and use of scientific and technological information require specialized skills and "know-how", which must be developed by each country,

Recognizing the desire of Member States to co-operate with each other in developing this "know-how" and in improving access to world sources of information contributing to development,

Taking account of the need to assist the developing countries in obtaining access to world sources of information and thereby contribute to the process of development of those countries,

Recognizing further that each nation has both the sovereign right and responsibility for defining and implementing its own information policy,

Recommends to Unesco Member States that they consider to:

1. Support, and actively participate in, the implementation of Unesco's UNISIST programme;

2. Participate in international, regional and subregional co-operative information programmes especially among developing countries, in order to promote the development of scientific and technological information and its better application and adaptation to development objectives;

3. On the basis of a thorough study of the role of scientific and technological achievements in reaching development objectives, elaborate and implement a national policy for utilization of scientific and technological information, based on the principles of UNISIST, and establish a national organizational focus for acquiring and utilizing information for development;

4. Give the necessary attention to the economic, social and cultural aspects of information, attaching particular importance to the extension of the principles of UNISIST to the social sciences;

5. Organize and co-ordinate national information resources in order to serve national development needs more effectively, as well as to contribute to the solution of global development problems;

6. Set up national and regional data and information analysis centres for the purpose of collecting, evaluating, processing and making effective use of domestic and foreign data in the field of science and technology;

7. Facilitate the use by developing countries under the most favourable conditions of information or data-transmission services that may exist;

8. Take action to remove obstacles to information flow, particularly by promoting greater freedom of access to governmental and private sources of scientific and technological information and by making information available, as needed, in its national language(s);

9. Reinforce national co-ordinating machinery for the provision of advice on information management to governmental organizations and information services;

10. Facilitate interaction among information specialists, the scientific and technological communities, all industrial and agricultural sectors, development specialists and planners, in order to apply information in meeting national needs;

11. Assign high priority to the user training programmes and to development of specialized manpower resources, trained in skills which include the understanding of development priorities, the location of information resources relevant to them, and the selection, repackaging, and application of information, wherever generated, to national development purposes.

Recommendation No. 3 - addressed to Unesco

The Intergovernmental Conference on Scientific and Technological Information for Development (UNISIST II),

Taking into account the aspirations of all countries for the establishment of a new international economic order and of a better balanced global flow of information,

Recalling resolution 2/0.1 adopted by the twentieth session of the General Conference of Unesco on the natural sciences and their application to development,

Recognizing that scientific and technological information is an essential resource for the advance of science and technology, for their application to economic, cultural, and social development, and for the exercise of the right of each country to improve the quality of life for its citizens,

Recognizing that scientific and technological information, together with economic, social and cultural information constitutes a common asset of humanity and, as a co-operatively developed national and international resource, is a fundamental factor in socio-economic development and the harmonious progress of mankind,

Considering that world tendencies toward the sharing of scientific and technological information, and the increased interdependence of all countries require that they work toward a wider and more balanced dissemination, a diminution of restrictions to the flow of information, and toward a better reciprocity in the circulation of scientific and technological information,

Noting that each country maintains the right and duty to determine the conditions of its development, and to decide upon its aims, priorities, and information needs, and that national policies relative to the acquisition, treatment, circulation, and utilization of scientific and technological information must correspond to the values and needs of each country, since information is closely linked to education, communication, science, technology and to the intricate and multidimensional process of development, and

Recognizing the need of scientists, engineers, educators, planners, industrialists, and other groups of specialized users to have ready access to this resource so necessary to them as they contribute to the cause of national, regional and international development,

Having reviewed Unesco's programme achievements and accomplishments since the UNISIST Conference of 1971, and

Recognizing that, through UNISIST, effective actions have been undertaken at the national, regional and international levels, responding to the needs of Member States,

That UNISIST has been strengthened by its merger with Unesco's programme in documentation, libraries and archives,

Emphasizing the unique role of UNISIST as an existing dynamic international programme,

Having approved the principles and lines of emphasis as set forth by the Director-General in the Main Working Document of the UNISIST II Conference,

1. Recommends to Unesco in order to build on the achievements and progress so far made:

   (a) continued pursuit of the original goal of UNISIST to facilitate the flow and utilization of scientific and technological information as laid down in Unesco's Medium-Term Plan for 1977-1982 and to create the necessary conditions to develop with appropriate speed a flexible world co-operation of information systems, networks and services, including economic, social and cultural aspects of information, to ensure maximum effectiveness in all fields of development;

   (b) further improvement of UNISIST as a conceptual framework for information systems and services development in all subject fields including the social sciences, at the national, regional and international levels;

   (c) continued priority in the UNISIST framework for actions directed to the development of infrastructures and training and education of information personnel and users, and the special importance attached to activities for the promotion of information policies and the promotion and dissemination of methods, norms and standards as prerequisites for a coherent programme;

2. Recognizes the need to make necessary adjustments to Unesco's programme in order to contribute better to the advance of science and technology and their application to development;

3. Recommends therefore that Unesco in its future information programme:

   (a) continue to implement the UNISIST programme, as laid down in resolution 20 C/5/10.1/1 but strengthening a user-oriented strategy, taking into account the needs of all potential users, such as scientific and technical communities, development planners, educators, professionals, technicians, local workers as well as others who participate in the process of development;

   (b) assist Member States, especially developing countries, at their request, to formulate and implement information policies and plans;

   (c) encourage bilateral and multilateral co-operative arrangements for the sharing of experience, resources, facilities and expertise among Member States at various levels of development;

   (d) assist in the strengthening of the role of national focal points and UNISIST national committees and revise the present guidelines in the light of the recognized role of information in development;

(e) assist in the creation and strengthening of national, regional and international information systems, and encourage and facilitate the participation of developing countries in the international systems;

(f) promote policies which ensure that information networks do not merely facilitate the flow of information but also encourage creativity, capacity for innovation, maximum utilization of local resources of information, and stimulate the will to gain knowledge, and to establish centres of documentation on technologies of local origin;

(g) sponsor studies aimed at identifying precisely the obstacles to unimpeded flow of information and exploring possible ways of overcoming them;

(h) assist Member States, on request, with determining their information needs, and strengthening of infrastructures by joint effort of information, library and archives services, including the use of specialized equipment to meet these needs;

(i) improve provision of primary documents in developing countries, bearing in mind among other things, the possibility of creating central documentation stores for libraries at the regional, subregional or national levels;

(j) assist Member States, in setting up national or regional data and information analysis centres and information institutions providing a wide range of users with services tailored to meet their special needs for evaluated, consolidated and repackaged information, data and documentation;

(k) encourage the creation and strengthening of international, regional, subregional and national referral services, in order to collect and disseminate information on the world sources of information;

(l) initiate specific projects to facilitate the selection, use and adaptation of advanced information and communication technologies by Member States, as appropriate, to gain access to international sources of information and to develop effective systems and networks;

(m) investigate and establish, if practicable, a possible coupon system which would enable developing countries to gain access under the best possible terms to international information systems and networks;

(n) promote the provision of advisory services to users such as decision-makers, extension workers or the general public on all aspects of information handling and use including policies and technologies;

(o) continue, in close co-operation with non-governmental organizations, to draw up norms, standards and guiding principles for information handling in general and for the operation of compatible information systems in particular;

(p) give support to terminological activities at national and international levels, since terminology is fundamental to the indexing and retrieving of information as well as to the transfer of knowledge into different languages;

(q) promote skill in use of information among all kinds of potential users, including technologists and scientists, especially in the use of on-line information systems, and for this purpose develop syllabi, training packages and guidelines;

(r) intensify efforts in training and education of personnel at all levels, including extension officers and information specialists requiring language skills, and take appropriate action to help Member States enhance the image and status of the information profession;

(s) strengthen UNISIST's current role in catalysing and harmonizing the design and development of information systems and services of the United Nations system;

(t) co-operate more closely with other Specialized United Nations Agencies, particularly in the field of patents and industrial information, in order to fulfil the overall objectives of UNISIST;

(u) pursue the joint IOB/UNISIST programme to enhance the use and application of UNISIST guidelines and standards within the United Nations system;

(v) provide on request for the evaluation of international information systems and programmes;

(w) undertake action with a view to mobilizing increased funds through UNDP and other international and bilateral agencies and other sources, for assisting developing countries to develop information systems;

(x) study the best way of relating existing Unesco sectoral information activities to the General Information Programme;

(y) convene every five to seven years, an intergovernmental conference on problems of the development of scientific and technical information.

4. Recommends to the Director-General that he submit to the next General Conference of Unesco, within the Draft Programme and Budget for 1981-1983, and on the recommendations of the Intergovernmental Council of the General Information Programme priority proposals based on the issues raised in Part C of the Main Working Document taking into account the debate of the Conference and as confirmed in this recommendation.

ANNEXES

I. Agenda

II. Addresses delivered during the Conference

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ANNEX I

AGENDA

1. Opening of the Conference
2. Election of the President
3. Adoption of the Rules of Procedure
4. Adoption of the Agenda
5. Election of the Vice-Presidents and Rapporteur
6. Scientific and Technological Information for Development
   - 6.1 Achievements since the "UNISIST" Intergovernmental Conference of 1971 - A review
   - 6.2 Flow and utilization of scientific and technological information and its role in development
   - 6.3 Strategies for future action at the national, regional and international levels
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ANNEX II

ADDRESSES DELIVERED DURING THE CONFERENCE

ANNEX II

Address by Mr. Amadou-Mahtar M'Bow
Director-General of the
United Nations Educational,
Scientific and Cultural Organization (Unesco)
at the opening meeting

Your Excellencies,
Delegates,
Ladies and Gentlemen,

It gives me great pleasure today to open this Intergovernmental Conference on Scientific and Technological Information for Development. To all delegations I extend a warm welcome to Unesco's Headquarters.

The fact that so many and such distinguished delegates are meeting here shows the degree of importance that Member States attach to the problems of the flow and utilization of scientific and technological information, and consequently to the work of this Conference. I am particularly happy to note that the delegations include many specialists who, over the years, have contributed to the planning and implementation of Unesco's activities in the field of information, particularly as members of the UNISIST Steering Committee and of the Intergovernmental Council for the General Information Programme.

My greetings also go to the representatives of the United Nations and of the other agencies of the United Nations system, and to the observers of many international organizations, both governmental and non-governmental. The presence among these representatives and observers of two distinguished personalities is particularly significant. That of Mr. de Jager, President of the International Council of Scientific Unions, an organization which, jointly with Unesco, conducted the study which was the starting-point of UNISIST, reminds us of the original links between UNISIST and the international scientific community, and of the need to safeguard and strengthen that special relationship. The presence of Mr. Joao Frank da Costa, Secretary-General of the United Nations Conference on Science and Technology for Development, emphasizes the fact that one of the immediate results to be expected from our Conference is that it will contribute to the work of the United Nations Conference. The latter should, indeed, in its general review of the problems of science and technology in relation to development, devote special attention to the role of information. The recommendations that will be formulated in Paris this week should therefore to a large extent be echoed in Vienna, at the end of August, among the Member States of the United Nations which are also those of Unesco.

Ladies and Gentlemen,

UNISIST was conceived in the late 1960s, during a period of powerful expansion in scientific research and technological development, which led to awareness of the new magnitude of problems of information in these fields. Information was growing, not only in volume but also in complexity, owing in particular to the increasingly interdisciplinary nature of research and to the focusing of research programmes on a variety of problems determined by the science and technology policies of States; it had also become apparent that the efforts to gain control of information, particularly with the help of informatics technologies, were in danger, without proper co-ordination, of causing fragmentation and anarchy. These were the concerns which led Unesco and the International Council of Scientific Unions in 1967 to embark on the study of a possible world science information system, which came to be designated by the acronym UNISIST. This was to be a flexible, developing network, based on the willingness of present and future information services to strengthen co-operation in their own interests.

So the study did not lead to a proposal for immediately operational machinery: UNISIST was to be the culmination of a long-term undertaking and the movement itself towards that goal, in other words, a programme of international co-operation.

These conclusions were adopted by the Intergovernmental Conference for the Establishment of a World Science Information System which was held in Paris in October 1971, and which is

known to us today as the UNISIST I Conference. The Conference recommended the launching of UNISIST as an intergovernmental programme, and this was done, following the agreement of the General Conference of Unesco, as from the beginning of 1973.

Since the decisions adopted by the General Conference in Nairobi in 1976, UNISIST has been an integral part of the Organization's General Information Programme, which encompasses all the activities in the fields of information, libraries and archives. Thus all the human potential and resources that the Organization devotes to information problems can now sustain a concerted effort which is applied, in particular, to the large-scale undertaking of UNISIST. This is the underlying significance of the solution reached by the General Conference at the close of a series of consultations and studies which received the attention of the Organization's governing organs over a period of several years. This solution reflects a reality, namely the unity and continuity in diversity of information activities, and a necessity, namely that of associating closely, in an integrated effort, the various institutions, professions and technologies which contribute to what may be called the management of human knowledge.

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Six years after the launching of the intergovernmental programme, Unesco worked out, thanks to UNISIST, the main points of a conceptual framework which is now broadly accepted for international co-operation in the transfer and exchange of information and for the establishment and development of national and international information systems.

In collaboration with Member States and international intergovernmental and non-governmental organizations, UNISIST has made it possible to devise instruments, methods, guidelines, standards and machinery to facilitate the organization and flow of information. This conceptual framework, it should be emphasized, is general in nature: it can be applied to the whole of knowledge, the total world information resources, and it is just as applicable to the social and human sciences as it is to the natural sciences for which it was originally conceived. We therefore find today that there are information systems in as widely varying fields as the agricultural sciences, the environment, education and architecture, which abide by the principles and standards of UNISIST.

In addition, Unesco has helped Member States to develop their own national information policies, to provide training for their information personnel and to set up libraries, archives, documentation centres and compatible information systems and services, thus contributing to the creation of the component parts of information networks which gradually enrich and strengthen one another.

All these activities have received steady support from the scientific community and from specialists in information problems, through representative non-governmental organizations: the International Council of Scientific Unions, the International Federation for Documentation, the International Federation of Library Associations, the International Council on Archives, and the International Organization for Standardization. I should like here and now to express my gratitude to them and to stress the fact that without the services rendered by these organizations, Unesco's programme in the field of information could not have been implemented as it has. Here I am referring not only to the activities which have been carried out in the context of the UNISIST programme, in its original form, but also to those which were implemented under the programme for documentation, libraries and archives and those which have been carried out for the past two years in the unified framework of the General Information Programme.

A large share of these activities serves the purpose of contributing to the development of information, particularly scientific and technological information in the developing countries.

Preoccupation with development has been a factor from the earliest stages of the planning and implementation of UNISIST. The feasibility study on a world science information system contained a series of recommendations concerning "assistance to developing countries". The text emphasized in particular the need to restore the balance between developing and developed countries, in respect of the communication media, and the need to ensure that the developing countries could derive benefit from the resource that information represents. But the questions raised by the study were, it must be acknowledged, focused on what might be called, if you will allow me the expression, the "anti-Babel" function of UNISIST, that is, the careful avoidance of anarchy, confusion and fragmentation in a world teeming with information. So the objective of intercommunication between systems seemed to take precedence over that of solving the problems of countries lacking in information, which was considered mainly from the angle of efforts needed to enable them to "take advantage" of UNISIST.

The initial objectives of UNISIST are still, without any doubt, legitimate and valid, but they must be placed today in the context of wider thinking about the problems of development, especially in the light of the concept of a new international economic order.

The patterns and anomalies in communication and information are revealed today as crucial aspects of the imbalances that characterize the present world situation, and which must be put right in order to establish more equitable relations between peoples and make possible an authentic development of all societies.

Undoubtedly, we must guard against unwarranted confusion between questions arising with regard to information as conveyed by the media - that is, essentially, news - and questions which arise in the field covered by our Conference, namely information relating to scientific and technological knowledge. But awareness of certain features that are common to both fields can, I think, only enrich the discussion.

This has two main aspects, summed up by the terms "flow" and "utilization", to be found in item 6.2 of the agenda. The aim is, first, to ensure that all countries, and especially the so-called developing countries, have access to this basic resource of information, as it is produced by the scientific and technological efforts of mankind as a whole, through overcoming the various obstacles which may impede its flow. It is, secondly, to consider the role of scientific and technological information in the development process itself. Now, the Member States of Unesco agree that true development should be endogenous, based on the living strength of a society, and that the society should take full responsibility for it and pursue it with complete independence as regards the decisions involved, in accordance with its own values and in such a way as to assert its identity. But endogenous does not mean autocratic - far from it - and the case of scientific and technological information is particularly limpid in this respect. The more a society is able to draw on rich and varied information, especially when it is derived from world sources of information, the more capable it is of making the free choices that are appropriate to the style of development and the objectives that it has adopted.

It is essential, for this to be so, that the information systems set up in the developing countries have freer and more exhaustive access to all the scientific knowledge and all the know-how necessary to progress, and that they do not confine themselves to facilitating the flow of information of national or foreign origin. They should also give attention to its utilization, especially in order to help create and strengthen scientific and technological potential in every State, as a key component of any endogenous development and of the national ability to innovate; furthermore, these countries must make their own direct contribution to the scrutiny, selection and adaptation of the technologies whose transfer may prove indispensable to the achievement of development objectives.

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Ladies and Gentlemen,

To clarify your discussions, the Secretariat has put together a set of basic documents, which I should now like to present to you briefly.

They comprise four documents, the most important of which, under reference number PGI/UNISIST/II/4, was compiled with the help of experts who met on three occasions at the Organization's Headquarters in a Conference Programme Committee.

The points to which I should like to draw your attention are shown under item 6 of the provisional agenda, entitled: Scientific and Technological Information for Development.

Part A of the document, which corresponds to item 6.1 of the provisional agenda, entitled "Achievements since the UNISIST Intergovernmental Conference of 1971", gives prominence to the evolution of the programme. Concentrated initially on information with a view to scientific and technological research, the programme henceforth applies to a broader field, namely, that of scientific and technological information, but also economic, social and cultural information, for development. This growth indicates both the new awareness of the importance of science and its applications for development and the need to take into account the many-faceted and integrated nature of the development process.

On the basis of the description of the activities carried out in the past six years or so, the Conference will be able to consider how far the implementation of UNISIST has answered the

changing needs of Member States. In the document before you, a special effort has been made, as indicated in the annotated provisional agenda, to "identify difficulties and shortfalls encountered in the execution of the programme actions", so that the delegations may suggest desirable improvements.

Part B of the document, on the flow and utilization of scientific and technological information and its role in development, affords the participants an opportunity, under item 6.2 of the agenda, to describe and compare each country's national undertakings. The discussion could contribute to a more searching analysis of the role of scientific and technological information in endogenous development, and in particular to a refinement of the techniques for utilization of this information in order to achieve concretely defined objectives.

It is important to distinguish between two types of information flow: those which circulate in the system of scientific and technological activities, and those which circulate in the much more complex system of development activities.

Those in the first system give expression to the role of information in building up science and technology and in disseminating knowledge to users who are themselves scientists, engineers and technicians. They serve development indirectly, by making it possible to achieve one or another of its objectives.

The flows in the second system concern all the decisions involved in development programmes, at all levels, from the national level down to that of local communities and small businesses. A whole series of economic, social, administrative or cultural issues form the subject-matter of such information.

The problem to be solved is how to make very varied information available to users with a variety of professional backgrounds and needs which differ from those of scientists and technologists.

Part B of the document also contains a section which invites reflection on the consequences for scientific and technological information of the considerable boom in communication and information technologies, particularly informatics. This expansion has facilitated the establishment of universal systems, which help in particular to improve the flow of information between countries with a high scientific potential and countries which have a lower potential.

The discussion on Part C of the document, concerned with strategies for future action at the national, regional and international levels, should lead, in the light of the conclusions of the discussion on the first two parts of the document, to the formulation of some recommendations. Some questions which could be the subject of such recommendations are analysed. These include the identification of needs and the framing of suitable policies to satisfy these needs, as well as the effective utilization of information and the improvement of access to it in various situations and for various purposes. The questions of the utilization of information technologies are also raised, as is that of regional co-operation, which is particularly relevant to the developing countries. For each of these questions, the document contains detailed proposals for possible action; on this basis, the Conference should be able to put forward specific recommendations.

Ladies and Gentlemen,

In the modern world, the transfer of scientific and technological information is of capital importance for all countries. It is crucial to the growth and enrichment of all the sciences, and it is acquiring immediate importance for the developing countries, as one of the prerequisites for access to the new technologies which they need, and for mastery of those technologies.

At the national level, information in general and scientific and technological information in particular are today recognized as essential to social progress and to understanding of the problems affecting the lives of nations; the lack of them is a very serious obstacle to development. Society must learn to gain control of a collective store of knowledge and to make full use of it in order to progress. Wise use of that knowledge for development depends on a number of essential factors: accurate definition of needs; information policy and strategy-making in harmony with national development policies; guaranteed ease of access to information both national and foreign; greater availability of the latter to all categories of the community of users; judicious use of advanced information technology and, especially, determination to eliminate systematically all obstacles to the free and wider circulation of information. These, Ladies and Gentlemen, are thoughts on which I invite you to base the recommendations that the Conference may make to Governments on action falling within their purview.

At the regional and international levels, Unesco, to the extent that it provides an opportunity to participate in major programmes of intellectual co-operation, particularly in the scientific sphere, can serve as a point of convergence and a catalyst to facilitate access to the sources of the scientific and technological infrastructure.

UNISIST has evolved, as I said earlier, and is now directed towards the social and economic value of scientific and technological information for development. This has quite naturally led Unesco to raise a great many questions concerning the ideas behind new tendencies and their priorities. This Conference now has the task of analysing these questions and framing possible strategies for concerted regional and international action which will take into account the results obtained so far in the field of scientific and technological information, such as the setting up of focal points, the establishment of international guidelines and the development of infrastructures and training courses. I shall make it my duty to incorporate these recommendations, as far as possible, in the Draft Programme and Budget for 1981-1983 and to bring them to the attention of the next General Conference.

But it is also important, as I stressed at the beginning of my address, that your recommendations should be brought to the attention of the United Nations Conference on Science and Technology for Development. When it has become acquainted with these texts, the Conference will be able to gauge the importance of the work already accomplished at the national level and at the level of international co-operation on UNISIST, and to appreciate the scope of the guidelines and the action which, in the light of what has been achieved, seem desirable to the international community meeting under the auspices of Unesco.

This is what was intended by the recommendation made by the Executive Board, at its last session, in a decision which is reproduced in full in an information document distributed to you (decision 107 EX/4.1.1).

Paragraph 12 "invites Member States and the Director-General to spare no effort in ensuring that the UNISIST II Conference, which is to open in Paris on 28 May 1979, makes an outstanding contribution to the solution of the problem of the flow of scientific and technological information, free access to such information by all countries and its use and effective application for the purposes of development; and recommends that its conclusions be communicated, in an appropriate form, to the United Nations Conference on Science and Technology for Development".

In the field of scientific and technological information, UNISIST provides a firm and effective basis for international co-operation - extended, since the nineteenth session of the General Conference, to documentation, libraries and archives. For nearly ten years now, the Member States have invested in it a considerable intellectual and material capital, and Unesco intends to build up further the possibilities that it offers for the free flow of information on all continents and in all countries.

Ladies and Gentlemen,

Since earliest times, man has never ceased to observe the creatures and objects around him, and to examine the natural world in a steady effort to adjust to its requirements and to mould it to his needs.

Over the centuries, he has thus built up an impressive store of knowledge about himself and the universe. And every civilization has done its share of research and discovery, adding, in turn, another stone to the edifice of human knowledge.

Until modern times, however, such civilizations developed mainly for themselves, expressing their creative genius in certain fields and not in others. Today, this is no longer true. Their destinies are inseparably bound together, and their hopes, achievements and failures necessarily have repercussions on one another.

Advances in knowledge made in one part of the world will henceforward certainly exert an influence, for good or ill, on all the rest.

Man has thus passed, not without difficulty or suffering, a major milestone on the road to his future. He has moved from the stage when each cultural area lived out its own adventure, ignorant of the others or even hostile, to the stage when each of them understands that its future is inextricably linked with that of the species.

But, even today, this is only an involuntary interdependence, which has benfited some to the detriment of others. It must become an interdependence that is deliberately accepted by all, on

a footing of justice and solidarity. The same meaning lies in the aspiration to build a new international order, to whose fulfilment Unesco intends to contribute to the full extent of its capabilities.

Its establishment presupposes a free and balanced flow of information on a world scale. Yet although the network of human communications now extends to the farthest corners of the earth, it rests on flagrant inequalities and causes very serious imbalances. Its main feature is the concentration of centres of information output in certain parts of the globe, whereas others must be content with receiving whatever information is allowed to filter through to them.

As we have seen through UNISIST's achievements, a great step has been taken towards the free flow of such information in the scientific and technological field. A conceptual framework has been developed and reliable infrastructures have been set up, however unevenly. These were the fundamental conditions for any advance in international co-operation on the subject. But once the means of access to scientific and technological information have been established, the unsolved question of its utilization looms very large.

This obviously concerns the so-called developing countries much more than the others. And it is for this reason that an international effort is needed, first and foremost, to make it easier for the Third World to gain mastery of information which comes to it only in a disjointed manner, selective on departure and very poorly distributed on arrival.

The Constitution of Unesco proclaims this; the Organization will "Maintain, increase and diffuse knowledge; by assuring the conservation and protection of the world's inheritance of books, works of art and monuments of history and science, and recommending to the nations concerned the necessary international conventions; by encouraging co-operation among the nations in all branches of intellectual activity, including the international exchange of persons active in the fields of education, science and culture and the exchange of publications, objects of artistic and scientific interest and other materials of information; by initiating methods of international co-operation calculated to give the people of all countries access to the printed and published materials produced by any of them".

The requirements of free information are that all forms of knowledge should be available to all, unimpeded by the legal, political, economic or military obstacles which slow down its effective circulation throughout the world.

Until today, total freedom of information has been much in demand, but only at the political level. It is time to restore to freedom its full meaning, and to demand it also for scientific and technological information.

For this to be achieved, information about basic research must be as easily accessible as that which concerns applied research and its methods of application, and must be able to flow within the Third World countries themselves, among their various categories of users, and their various nations and regions.

With a view to this, I think it particularly worth while to plan facilities for utilization, co-ordination and exchange of experience at a regional or subregional level, as well as at the level of States. For it is an undoubted fact that the pooling of the human, material and technical resources of a whole region offers to each of its parts advantages that it would be incapable of acquiring alone.

Ladies and Gentlemen,

UNISIST has created the conditions that are indispensable to the operation of a world information network. But apart from the fact that all countries have not benefited from it equally, these conditions have still to be put to proper use in the Third World. More investment is needed from the developed countries, greater technical assistance from the international community and a sustained effort by Member States, so that the necessary steps may be taken to work out coherent information policies.

Your Conference must show that UNISIST, which has fulfilled its initial promises, is now capable of adapting itself to the broadening and evolving needs of the Member States.

Bearing in mind the considerable influence that your proceedings may have on the new lines of emphasis of UNISIST and on the place it should occupy within the United Nations system, I wish your Conference the fullest possible success.

Address by Mrs. Inès Wesley-Tanasković,
President of the Conference

Mr. Director-General,
Delegates,
Ladies and Gentlemen,

It is an honour and real pleasure for me to preside over this Conference. I deeply appreciate the confidence that you have placed in me and I hope that, in a spirit of constructive collaboration, we shall once again reach a consensus on the matters to be discussed here by our delegations.

Ladies and Gentlemen, I should like to share with you some personal thoughts on the questions which concern us and which have brought us together today.

As you know, since UNISIST was set up, I have had the honour of serving first as Chairman of the UNISIST Steering Committee until 1976, and then as Vice-Chairman of the Intergovernmental Council for the General Information Programme. This will indicate how deeply satisfied I am to preside over the proceedings of this Conference since, if I may say so, I believe that in electing me you have shown your approval of what the UNISIST programme has accomplished so far.

The first part of the Main Working Document deals with achievements, and, as the Director-General has said, it enables the delegates of Member States to appreciate the way in which the programme has answered their needs. The document examines the progress achieved with honesty, clarity and balance. The difficulties of implementation are indicated in a remarkably professional way. I think that this is an excellent document and I wish to congratulate the Director-General and his collaborators on it. Indeed, I am not surprised at its excellence since, if you will allow me to say so, Mr. Director-General, you have in the General Information Programme an outstanding team whose skills cover a very wide range of activities, a numerous and energetic team of which you can justly be proud. This team, placed at the disposal of Member States and in close collaboration with the relevant professional circles, is capable of achievements on a world scale, as has indeed been proved, despite certain shortfalls, by the stir that the UNISIST programme has created throughout the world and also - remarkably - by its impact on the United Nations system, which is expected to play the leading role in the promotion of new institutional arrangements for the equitable and effective exchange of information.

As Chairman of the Council of the United Nations University, I am in a position to emphasize that Unesco, with UNISIST, provides a unique context within the United Nations system in which compatible national and international programmes and systems can develop.

If we look briefly at the "Selective list of activities in the field of information" (document PGI/UNISIST II/Ref. 1), we realize that its 120 or more pages tell us - succinctly but cogently - even before we open our discussions and formulate our message to the Vienna Conference - that the most well founded and realistic hope with which we can face the world of tomorrow lies in UNISIST.

As for the future strategies to be adopted with a view to a redirection of UNISIST, we must put forward very precise and practical recommendations this week, during the Conference that brings us together. To fulfil this task, I rely on you, distinguished delegates, your outstanding skills, your vast experience in this field, your feelings of solidarity and your proven loyalty, to ensure that scientific and technological information may indeed serve the cause of development.

I am therefore very anxious that we should not lose sight, during our discussions, of one of the objectives of our UNISIST II Conference, which is to inform the United Nations Conference on Science and Technology for Development, to be held in Vienna, of our achievements here.

Ladies and Gentlemen, the results of our Conference will certainly exert a major influence, both on the new lines of emphasis of UNISIST and on the role of Unesco in the United Nations system in the years to come. I want to work with you to make it a complete success. Thank you.

Address by Professor C. de Jager,
President of the International Council
of Scientific Unions (ICSU)

It gives me particular pleasure to have this opportunity to address this second UNISIST Conference. The first came after a period of intensive collaboration between Unesco and ICSU to study if an international scientific and technology information system appeared possible. It was decided that such a system was feasible. The progress that has been made in the interval shows that not only was the decision to proceed with UNISIST a correct one but the proposals adopted by the first Conference have provided an excellent basis for developments over the last seven-and-a-half years. They also appear, in general, to be suitable for continued progress in the future. There may be some necessity to increase the attention given to particular areas: one in which strong emphasis must continue to be given is in education, so as to strengthen human resources, particularly in the developing countries. The role of scientific and technological information in social and economic development is becoming increasingly recognized and it is essential that all nations and organizations work together to ensure full access to such information. I am stressing scientific and technological information because these are the main fields of ICSU's interest. The fact that UNISIST is being extended - to almost all information - must not detract from the fact that UNISIST began as a study for scientific and technological information and that the priorities should rest with the essential need to provide all countries access to such information to assist in development.

The production and use of scientific information are, of course, a vital part of the work of the International Council of Scientific Unions. The 18 international scientific unions, the 14 scientific associates and most of the scientific committees and commissions are concerned with one or more aspects of science information, documentation, libraries or archives.

The scientific unions are deeply involved in the production of scientific information and also in its distribution throughout the world. One of the ways they do this is by organizing conferences, congresses, meetings, colloquia, working groups at which the more recent products of scientific research, the results, are transmitted rapidly to a specialized audience. Not only do such meetings provide rapidly the transfer of up-to-date, highly specific information from producer to user, but they also provide the possibility of direct producer-user interaction, thus enabling the user to obtain directly from the producer supplementary information which would not have been published and which it might have been difficult to obtain even by correspondence. Meetings of course play an essential part in the invisible college, about which I shall speak later. I have stressed above the word rapidly, because it is important that the results are made available quickly. The reports of such conferences, meetings, etc., are often published later, with delays of several months to several years. At present when much of scientific research is expensive and where results from all parts of the world have to be built up and integrated, rapid access to new information can be not only time- but also money-saving. Most of you will be aware of the intensive research work that went into the discovery of the structure of deoxyribonucleic acid (DNA) and of the importance of welding together research from various laboratories. The way in which information for this research was rapidly exchanged between research workers, who were producers of certain information and users of other, illustrates the importance of the three R's in the acquisition of scientific, and much of technical, information: rapidity, reliability and relevance.

The introduction of the computer and of telecommunications networks is bringing solutions to the problems of providing rapid, reliable and relevant results, but we should not overlook the fact that even the most modern system can not compensate for the failings of the unenlightened searcher for information. When we seek information in a library, documentation centre or archive we have the librarians, documentalists and archivists to help us to limit our search and to provide information in manageable proportions. Similar expertise is necessary when searching for information with an on-line system. Computerization brings rapidity - it does not automatically bring relevance or reliability - and if in answer to a poorly posed request we obtain several million bits of information, they must be paid for even if only a few turn out to be really relevant. As many of us know from attending certain types of conferences, and this present one

is a pleasant exception, the amount of documentation, often received on the first day, is such that it is not possible to read it in the time available in the conference so that much of it is unused, and unused information often means wasted money. This focus on the large computerized services leads me to underline the fact that such services form only one tool in the information infrastructure, even in the most developed countries. In every country the variety of information needs is very wide and the range of channels available to provide such information should also be wide. These should include appropriate structures for collecting, processing and providing information, such as libraries, documentation centres, and archives. To imagine that the establishment of a terminal linked to other information centres would provide full access to information is for the present a myth: even if needs are limited to natural sciences it is still a myth.

Speaking from my own experience my information requirements are provided first by my own books, journals and reprints, next by the information resources of my institute, then by the national information sources and ultimately by regional and international information sources. This is essentially true whether it be for information for my research studies, for purchasing new equipment, for gardening or any other of my hobbies. While looking to the further development of adequate information services we must continue to make use of the structures available and build on these. Computerized services can help but they are not the ultimate, universal solution to all information problems.

I mentioned earlier the invisible college, which first began to develop in the seventeenth century and which provides information (highly relevant and specific information) informally and cheaply to people in the network. The exchange of information is of course simplified by the fact that the exchange takes place between two or more people working in a restricted area of one discipline with a common language with which to define interests and the package of information required. By maintaining a series of channels of information the possibilities of understanding requests for information increase and the likelihood of increasingly relevant information is augmented. It is often forgotten that although this system began in the natural sciences it now extends very widely in all fields of knowledge and know-how. But it should not be overlooked that it is only one part of the information transfer infrastructure and is used to complement others.

At the 1971 UNISIST Conference the President of ICSU gave a review of some of the activities of the ICSU family which deal with scientific information, such as, first the Committee on Data for Science and Technology (CODATA), which has been working closely with the UNISIST Secretariat in studies to ensure access to high quality, reliable data and in organizing international training courses; second the ICSU Abstracting Board, which has also been working closely with the UNISIST Secretariat, particularly in the preparation of the reference manual for machine-readable bibliographic descriptions. However, as you will find many references to these in the Main Working Document and to some of the ICSU Scientific Associates, such as the Fédération Internationale de Documentation (FID) and the International Federation of Library Associations and Institutions (IFLA), I will concentrate here on the ICSU Committee on Science and Technology for Development (COSTED) which held recently a meeting in Kuala Lumpur entitled: "Science and Technology for Development: Views of the Developing World". This stressed a number of points with regard to information systems and made the following decision: the symposium recognizing that efficient dissemination of relevant scientific and technological information has an important role to play in harnessing science and technology for development, urges that appropriate information systems be established that will promote economic and social development.

The COSTED report stresses "the aspects of information services that have not been sufficiently implemented and are of particular importance to developing countries. These include user-oriented and problem-oriented information services that will take into account the information policy of the country or countries concerned and, in particular, the information needs of the extension workers. Such services should be set up on a regional or subregional basis around existing facilities, whenever possible. National information policies should give high priority to establishing extension services and to the use of mass media for communication of relevant scientific and technical information to the larger sections of the community. The establishment of information services of this kind requires funding that most of the developing countries are unable to provide. Therefore, it is essential that international organizations take an active role in the endeavour and help to provide the necessary funds". Information is a resource - like other resources it has to be paid for.

COSTED underlines the fact that the academics and professional people have a tendency to forget that scientific and technical information is not used exclusively by scientists and technologists, but is also used by farmers, teachers, manufacturers, managers, policy-makers, etc. To collect, process, select and distribute information may be costly. We should not ignore the fact that it brings economic and social benefits, as well as providing an essential input into the development of indigenous capabilities.

What is required is an appropriate range of facilities and services adequate to respond to the needs of the community, and which can ensure adequate communication links between the producers, the processors and the users whether these are research scientists, extension workers or technicians.

The organization of information is a problem of global significance in which all nations must collaborate, and in which all appropriate international organizations must participate. Back in 1966 when ICSU began to consider the possibilities of UNISIST-type study, it turned to the Science Sector of Unesco as a natural partner in this endeavour. The progress made since then more than justifies this choice, and I am happy to be able to report that at an informal meeting of non-governmental organizations concerned with science and technical information, documentation, libraries and archives organized yesterday by ICSU's Policy Group on Scientific Information there was unanimous agreement that in view of the experience already gained in the UNISIST and PGI studies Unesco is the most appropriate Organization to continue the work started more than a decade ago to provide both the Member States and the scientific and technological communities with the information they need, without adding excessive financial burdens to the Member States, and without unnecessary duplication of effort.

May I take this opportunity to pledge the help of the members of the ICSU family in assisting Unesco in its objectives and to wish much success to UNISIST II.

Address by H. E. Mr. Joao Frank Da Costa
Secretary-General, United Nations Conference on
Science and Technology in the Service of Development

Madam Chairman,
Mr. Director-General,
Ladies and Gentlemen,

I am very glad to have been given the opportunity to say a few words at the beginning of this general discussion. Group therapy being the fashion today, I shall not hesitate to say in public that I am emotionally involved with Unesco. This house was once mine and I still regard it as mine. The Conference which I have been asked to co-ordinate is not a purely United Nations operation. It concerns the whole United Nations system and consequently Unesco has a share of the utmost importance in it. One of the objects of this UNISIST II Conference is precisely to collaborate with UNCSTD and contribute to the follow-up action in so far as information in the service of development is concerned, particularly scientific and technological information.

This emphasis on development, which seems to me to characterize the new approach and which is a prominent feature of the main working paper in particular, is most appropriate, I must say. Eight years ago, as delegate of my country, I myself participated in UNISIST I in this same room and I must say that we were a bit disappointed on seeing development problems given only relative priority, ranking after the guiding principles of the interconnecting tools of the developed systems. If my memory serves me correctly, 5.65 per cent of the paragraphs in the main preparatory document for UNISIST I were devoted to development problems. That was not much. Now we see that the proportion has been reversed and that development problems are at the forefront of our concerns, which is very gratifying.

Since UNISIST I it seems to me that three events, three major developments, have occurred. The first is the insistence on a new international economic order. Even if we do not yet know exactly what this involves, we must at least try to base this new international economic order on justice and the redressing of the imbalances and distortions which are a feature of the world today and which do not really benefit anyone. The second is that the whole United Nations system has gradually but very clearly turned towards development goals, which gives us a new dimension. The third is that development today is seen quite differently from the way in which it was seen 20 years ago, or even ten years ago. Cast your minds back to international development strategy. General Assembly resolution 2626 was adopted in 1970. Yet on reading it today one has the impression that it is a century old. This is precisely because the dimensions of development have been changed, made more specific. Here I must pay a tribute to Unesco's role, because Unesco has decidedly contributed to giving an exact idea of development, which is not merely economic growth, not growth of the GNP or the per capita national product, but something much more complex.

We shall consider in due course the suggestions which this Conference might make with a view to the preparatory work for the Vienna Conference and to this Conference. This is not quite what I was wanting to talk about, at least not in detail. I should have liked to dwell on the linking of the concept of information, particularly scientific and technological information, with the defining of the new dimensions of development. In doing so I shall make 12 points which I regard as of value.

My first point is that development must be total, that is, it must transcend the purely economic and embrace social aspects (diet, health, education, housing, employment, for example) and cultural, political and spiritual aspects (creativeness, the quality of life, human rights). Here we see that the concept of information, the concept of UNISIST, have evolved in line with this conception, that is, that UNISIST, originally designed for the natural sciences, provision being made for extension to the social sciences, has now clearly become a conceptual framework, a set of principles, applicable to every field of knowledge. Information of an economic, social, financial, administrative and legal character, information concerning management and so on, is

obviously needed for development. Without it the purely scientific and technical information is inadequate, cannot be turned to account. Here we see a change in UNISIST which reflects the change in the concept of development.

My second point is that development must be conceived of as original, that is, that more or less servile imitation of models is regarded as undesirable. This means that styles of development must be diversified in keeping not only with the distribution of production factors, economic and social structures, the natural and human environment, cultural integrity, but also with each country's goals and its view of the future. Now, here too, this concept must be adapted to the field of information. There is no one information system, no single model for the development of information systems. Each country must have a system of its own. Each country must assemble the various channels of information at its disposal in a manner adapted to its own needs. Consequently, information has something specific about it, something specific to the nation, which makes preliminary processing at national level essential. It is not enough just to connect up with it, as with a gas, electricity or water supply, and turn it on at will. The information must be arranged, processed in packages, according to the various recipients - information intended for decision-makers, administrators in the broader sense, information intended for scientists and technologists, that is, the scientific and technological community, universities and undertakings, the general public, information users, that is, the whole of the social body. Well, for that there must of course be specific systems.

My third point is that development must be self-determined and endogenous. This applies not only to the acquisition of ability to select a style of development, but also to the ability to implement it and at the same time to reduce the vulnerability of the national community, to unify and extend domestic markets, ensure the local production of staple foods and other vital commodities. Now, this endogenous character of development, which must be self-supporting, indicates the need for using local resources in information. Only too often the developing countries think only of the big international systems, those vast automatic systems. It does not occur to them that the first task is to circulate at home everything that exists in the way of information. This domestic information is available even in smaller countries and abounds in larger countries in particular. At present we are witnessing a kind of compartmentalization of information. There is no horizontal distribution of information at home, and this is of course essential. Then again, the national machinery responsible for development and for the transfer of technology must be provided with information for a more detailed knowledge of the conditions. An adequate flow of information will also contribute to the establishment of consolidation of a national scientific and technological community, which is absolutely essential if development is to be self-supporting.

My fourth point relates to opportunities for co-operation. Of course self-reliance does not mean autarchy and it must be achieved on a wider scale than the national one, according to an "horizontal" scheme, that is, a scheme connecting countries with similar conditions, the developing countries in particular, or a "triangular" scheme, involving the participation of countries of different categories too, that is, usually both developed and developing countries. There is no need to dwell at length on this. Of course co-operation among developing countries is essential, in accordance with the standards of TCDC (Technical Co-operation among Developing Countries), which is still an empty framework. Some effort must also be made at the regional and the subregional level, where integration must be achieved. The region, especially in the sense in which it is understood in the United Nations, seems generally to be too vast and too heterogeneous a concept to serve very specific co-operative efforts. Very often the subregional framework is the most appropriate and the most dynamic. At the international level proper, co-operation among both developed and developing countries is needed, chiefly in order to create an international atmosphere conducive to constructive national efforts. Clearly, all the national efforts will produce very little effect if the national atmosphere is not favourable. The internationalization of all these problems does not in itself mean very much, except that it should establish an international atmosphere allowing of the strengthening of national capacities. This is particularly applicable in the event of barriers in the way of the circulation of information, barriers which, as you know, may be of a political, legal, economic or administrative character. Such an international atmosphere should also make it possible to correct, or at least gradually compensate, the distortions existing in the flow of information and in conditions of access to it.

My fifth point is that development must be coherent and integrated. The "truncated" growth of certain sectors, usually due to the "redeployment" or "relocation" policies of multinational firms, has nothing in common with real development and leads to increased dependence and vulnerability. There must be sound organic relations, both horizontal and vertical, between the different activities, particularly between the agricultural and the industrial sectors and between activities directed outwards and those intended for the country itself. Such relations should also ensure full communication and interdependence and closer integration with a genuinely national supply and demand. Here we touch on one of the basic problems, namely, that the developing

countries often imagine that they need only build the infrastructure, the machinery, and these efforts will be integrated in development as if by magic. This unfortunately is not the case, in so far as either research and development or the building of information, particularly scientific and technological information, services, systems or centres, are concerned. We have services which are sometimes highly sophisticated, highly satisfactory in every respect, except that they have no customers. Then it is thought that they lack customers because the users are not educated, that it is a question of educating the users, that these information systems should be active and aggressive and go out and seek the customer and compel him to use the information. This implies neglect of a fundamental factor. The genuinely national elements in the productive system of a developing country are usually too weak, too small, and lack the financial and organizational resources required to be able to make good use of the information. As for the concerns which are only extensions of the economies of the developed countries, they are in no need of information, receiving all they require through intracorporative channels. In the developing countries the large private national firm is the exception and it is often in a period of regression. A large nationalized concern, a large State concern, can have recourse to the information system, but very often it ends up by being contaminated and behaves like a private firm instead of a State concern. Consequently it does not put purely national interests first. So a whole series of measures have to be taken here and this is absolutely fundamental. It is pointless to discuss the strengthening of national systems if there is no demand. The demand for information must be stimulated. This can be done through strengthening small concerns, encouraging genuinely national large concerns, getting nationalized concerns to pursue really national and collective goals and compelling the affiliates of foreign or multinational firms to undertake research and development activities. Then the information will be put to use.

My sixth point is that development must respect the integrity of both the natural and the cultural environment, and also the traditional structures, which may prove useful in preserving social cohesion, the keeping up of national values and protection against all forms of alienation. Here again we are faced with the need for using local resources in the way of information, identifying indigenous local knowledge, resources, know-how and aptitudes, and also obtaining information which enables us to perceive not only the nominal cost of technological transactions, but also their real cost and, more specifically, their cost in social terms.

My seventh point is that development must be planned and must involve the constant intervention of the public authority, which does not necessarily preclude a market economy. However, it is generally recognized that the "free play of the laws of economics" is by no means conducive to the automatic balanced distribution of the scientific and technological potential, that it is, on the contrary, a source of concentration and polarization in the most developed countries and centres. Convergence of the interests of private firms and countries in general must be brought about by appropriate mechanisms. It is of course the government which must be responsible for the planning and programming of development, and for its information aspects, at least in the developing countries. It is the government which must transcend individual interests, which impede the general observance of standards, specifications of equipment, logistics, etc. The State must have an information policy which fits in with its responsibilities in the implementation of development. Information is therefore a public service. We must not ask exactly how much information systems cost, who is going to pay and with what. Information systems are a social service just as useful as education, transport or social welfare services, for which the State is usually responsible.

My eighth point is that development must be centred on justice and an equitable social order, which usually presupposes structural changes which involve the extension to all sectors of the population of the benefits of science and technology and not just their negative effects. In other words it is a question not only of changing relations between States, particularly between developed and developing States, but also of making changes and adjustments within the society itself. Here we have a clear indication that scientific and technological information, and information generally, must help resolve the dualism, the economic and social dichotomy, which is an outstanding feature of the developing countries. This cannot be done unless the traditional sector, the archaic sector which has been marginalized by historical circumstances, is given new life by means of a transfusion of science and technology and other knowledge, particularly in the social sphere, the social sciences and those social technologies which allow of redistributing income, for example, or using the taxation system to bring about more justice and more efficiency in the community. Now all this can be achieved only by means of a plan and a firm resolve on the part of the authorities. It need not be assumed that attaching greater value to the traditional sector will lead to mediocrity throughout the productive system. On the contrary, a need must not be confused with the technology designed to meet it; we cannot have it said that the developing countries should be content with second-rate technologies because their needs are elementary. On the contrary, elementary needs can sometimes be met more adequately with advanced technologies.

My ninth point is that development must be democratic in yet another sense. It must correspond to the choices determined by the population as a whole. The idea that technological decisions compel acceptance per se must be categorically rejected. The purposes of society are not scientific and technological and should not escape the control of society, or, in the last analysis, of Man, who should be free to determine his own fate. If the public, if the people, are to be enabled to make decisions which are not scientific and technological ones but which involve a certain choice implying scientific and technological decisions in the second resort, then they must be given the necessary information. So there must be intermediaries, social intermediaries, to bring the public the information required for decision-making. This is a delicate and complicated task involving information problems generally, not only the scientific and technological information problem, of which Unesco is particularly aware.

My tenth point is that development must be competitive. The less developed regions and countries, far from remaining cut off as if in "reserves" of the Amerindian variety, where they would vegetate unaffected by the broader trends of dynamic growth, would take an active part in the new optimum distribution of labour, which is at the very source of the new international economic order. Now if development is to be competitive, the scientific, technological and informational dependence which is a feature of the present structures will have to be done away with. The developing countries will have to participate fully in the international information systems and their management. They must realize the importance of a knowledge of the information industries which loom so large today. They must also be fully aware of the need for falling in with modernization in informatics and telecommunications, for their development can never be competitive without it.

My eleventh point is that development must be innovative. One must not be content with merely importing technologies which have been superseded in the advanced countries, or even advanced technologies developed elsewhere. Only a command of the scientific knowledge available internationally, including knowledge which, for economic reasons, has not been turned to account by the developed countries, can ensure original creative technological development. Here we are attacking the very conception of the new international economic order. This new international economic order must not consist merely of displacing tired industries, polluting industries and condemned industries. It is for the developing countries to evolve their own technologies. This seems over-optimistic, but it is by no means impossible. Indeed, for reasons connected with the dynamics of the innovatory process, which is based essentially on profit in developed societies, there is knowledge in profusion which has never been turned to account in innovatory processes and has only to be applied by means of certain new technologies. Take for example the fact that the developed countries, on the whole, have achieved their growth on the basis of their use of the physical sciences and have done very little with all the knowledge accumulated in biology. Well, the developing countries can have access to all this knowledge. It is up to them to work on it in a setting less fraught with inequality than was the case with the physical sciences. This is rather caricatural, but I should like to give a practical example - the technology for the distillation of alcohol for fuel, a technology which is not used in the industrial countries because it is uneconomic, but which is economic and advantageous as a source of power in the developing countries. The problem of how to recuperate and pass on information which is relatively old and no longer in active circulation among the developed countries will have to be solved. The information systems will have to take this very important problem into consideration.

My twelfth and last point is that development planning must be based on realistic assessments of national needs, consumption models corresponding to the country's genius and potential, the resources available, the gross national product, the capacity for accumulation and possibilities for the interaction of science and technology with production activities. Here again what is needed is realistic information systems, not sumptuous or formal systems. Ritual has a certain appeal for everyone: all one has to do is to offer a high mass for scientific and technological information and development will begin immediately, or so it is erroneously believed. A pragmatic attitude is required - which does not mean a "rank and file" attitude - let us not confuse originality with reactionary retrograde attitudes!

Madam Chairman, I think these meeting-points of the concerns of "your" conference and the concerns of "my" conference were worth stressing. I am convinced that UNISIST II will be of great assistance in providing valuable elements for the Vienna Conference. May I seize this opportunity of emphasizing Unesco's role in this Conference, in respect of scientific and technological information, in respect of information generally, as of science and technology. Unesco's outstanding role was not dictated by a formal distribution of competences. That is not very important. What is important is the spirit of Unesco, the prospective spirit, the spirit of interdisciplinarity, the spirit of broad understanding of human phenomena as total phenomena, as cultural phenomena. In my view, Madam Chairman, this points to the course Unesco will have to adopt, a course of primary importance, in the Vienna Conference and its follow-up.

Thank you, Madam Chairman.

Address given by Mr. Amadou-Mahtar M'Bow
Director-General of the
United Nations Educational,
Scientific and Cultural Organization (Unesco)
at the closing meeting

Madam Chairman,
Ladies and Gentlemen,

The Intergovernmental Conference on Scientific and Technological Information for Development has just adopted its report and a series of recommendations which show the interest and significance of the work achieved since the beginning of the week. This result is due to the efforts of all the participants, but you, Madam President, have contributed more than anyone else by the way in which you have conducted the discussion, with your habitual good-humoured authority. I should like to thank you, as also the Rapporteur général, Mr. John Gray, who successfully drafted a full, clear and concise report which reflects all the finer points of the discussions. I should also like to thank the members of the Bureau and Mr. Jacques Michel and his colleagues in the drafting group who, on the basis of the texts submitted by the delegations and the Bureau of the Conference, worked out the recommendations on which the Conference has just voted.

May I also say, Madam President, how sorry I was not to have been able to attend all your discussions. Though it was impossible for me to be present in this room, I followed your discussions closely, sometimes by listening to them in my office, sometimes by reading on different occasions throughout the day the detailed reports prepared by the members of the Secretariat who represented me at the meetings.

As a result of UNISIST II, Unesco now has a series of opinions and proposals formulated at a particularly opportune moment. We find ourselves on the eve of the meeting of the United Nations Conference on Science and Technology in the Service of Development, at a time when the preparatory work with a view to the elaboration of an international strategy for the Third United Nations Development Decade has just begun. Then, in so far as Unesco is concerned, we are shortly going to undertake the working out of the Draft Programme and Budget for 1981-1983 and make a start on the deliberations which will lead to the working out of the Organization's second Medium-Term Plan. So the conclusions of UNISIST II provide us with the basis for a tangible contribution on the part of Unesco to the work of the institutions of the United Nations system and particularly valuable guidance for the Organization's future programmes. UNISIST II gave rise to a broad exchange of views on the problems involved in scientific and technological information as they arise in the present-day world, with particular reference to development requirements - and this is one of the major results of the Conference.

The scope of the coverage of that information was well brought out. Attention was drawn, for example, to the need for considering as an inseparable whole, scientific and technological information in the narrower sense and a broader corpus of information of an economic, social, cultural or administrative character whenever the overall development of societies was involved. Here the work under way within the framework of the Organization to extend UNISIST to the social sciences seemed especially significant. The diversity of the sources of information was also stressed: archive documents, patents (the wealth of this source was referred to by the World Intellectual Property Organization), standards (the significance of the latter was mentioned by the International Organization for Standardization), in addition to the bibliographical sources and the primary and tertiary literature proper.

What is more, it was apparent from the discussion that the problems involved in scientific and technological information as they arise throughout the world have to be placed in a broader perspective, the structure of international relations, and that, as with economic or communication problems, they reflect aspects of the distortions and inequalities which are a feature of those relations. Scientific and technological information problems are not the same as news dissemination problems and could not be assimilated with them of course. Nevertheless, contradictory approaches and attitudes to these two sets of problems obviously cannot be adopted. As has been emphasized here, we cannot demand the freest flow of news and not insist on the

same free flow, which must be the same for all the countries, when it comes to scientific and technological information. It is really contradictory, too, to demand complete freedom of access to sources of political information and to restrict that freedom in the case of scientific and technological information. One has to be consistent.

The circulation of scientific and technological information is not spontaneous, however. It must be encouraged by the resolve of those concerned and, first of all, by the political will of States. So the infrastructure and systems required for collecting and disseminating information of either foreign or domestic origin must be set up and developed at national level. It would be futile, as the discussions have shown, to build ambitious systems or networks at the international level if the capacity to process and use the information did not exist in each country. Then again, the flows of scientific and technological information might remain incomplete and limited, in certain fields at least, unless considerable efforts were made to overcome the various barriers - economic, legislative, administrative - which can impede them. This is the case, for example, with copyright, which is the subject of a Unesco programme shown by the Conference to be complementary in many ways to the General Information Programme and UNISIST in particular. While it is obvious that extensive use of writings, pictures and sounds without compensation might eliminate the stimulus required for the production of further information and that in the long run society would suffer thereby, it is equally true that the present copyright system does not solve the problems connected with access to knowledge. This unsatisfactory situation is largely due to the absence or deficiencies of an integrated approach in policies and institutions at the national and the international level. So it would seem that it is in this direction that the Organization's activities in this field must be bent.

The discussions also showed that in addition to the problem of circulation proper, that of the transforming of information into knowledge, that is, actually its effective utilization, continuously arises. In the recommendations which have just been adopted the importance of a strategy centred on the users is rightly mentioned. The latter must be regarded as an ever wider group with increasingly diversified needs. It is not just a matter of serving scientists and technologists, particularly important though their needs may be for the building up by each country of the scientific and technological potential required for endogenous development.

Attention must also be given to the decision-makers in all fields and, generally speaking, at a level closer to everyday life in each society - small and medium-sized undertakings, farms and other small-scale activities. How can the information be put within reach of its final users? The importance of suitable presentation, of "packaging" of information, of a fusion of the relevant documents, was very much stressed during the Conference and this is undoubtedly one of the directions in which most encouragement should be given to the action of the information systems in the broadest sense.

As a complementary measure, appropriate training for the users should receive particular attention as well.

However, the trends which may result from this analysis of users' requirements should not blind us to the Conference's strong reaffirmation of UNISIST's initial goals and the spirit in which the programme was conceived. For instance, the importance of the concerns relating to the intercommunication of systems was confirmed. As was the general conception of the transfer of information which is at the basis of UNISIST - the idea of a flexible decentralized network operating by means of the voluntary co-operation of information systems and services spread throughout the various countries. The current programme themes as contained in the Organization's Medium-Term Plan and programme and budget were generally regarded as an appropriate framework for including the new trends which are emerging. It will thus be possible for the programme to continue to be structured in accordance with themes relating to information policies, methods, rules and standards, infrastructures, specialized systems and training. The continuity of UNISIST as an idea, a movement towards a world information system, has been reaffirmed. It should be stressed that this confirmation is based on an appreciation, which is on the whole positive, of the work accomplished in the last six years. As shown by the statements made in the course of discussion, the programme has set its mark on the development of information systems and services throughout the world. It has helped beyond all doubt to encourage the establishment or development of individual national facilities and specific programmes of co-operation, particularly at regional or subregional level. The principles and standards formulated therein have provided guidance for the ways in which a number of information systems, particularly within the United Nations system, are organized and operate. In addition, a very positive appraisal has been made of its most recently emerging trends, in particular the establishment of the General Information Programme, which has now taken over responsibility for developing UNISIST.

The recommendations you have adopted thus reflect both the continuity of UNISIST and the new lines of policy which have appeared desirable to the Conference in the course of its discussions. They will facilitate the work of the Intergovernmental Council for the General Information Programme, and will enable me to propose to the General Conference in 1980 a programme which will concord with the views of Member States. Member States have shown very clearly during this Conference their determination to continue and expand their co-operation in the UNISIST context. Furthermore, the very warm support given by the most representative non-governmental organizations to continuing the work of UNISIST has been a welcome addition to this show of confidence. The International Council of Scientific Unions, which is especially entitled to represent the scientific community, the International Federation for Documentation, the International Federation of Library Associations and Institutes, the International Council on Archives and the International Organization for Standardization all made in their statements very positive contributions to the Conference which augur well for co-operation in the coming years.

It is therefore only natural that the Conference, with reference to the United Nations Conference on Science and Technology for Development, should consider not only that UNISIST II, in accordance with the responsibilities defined by the General Conference, has an important message to convey to the United Nations Conference, but also that Unesco possesses in UNISIST a most appropriate instrument for implementing the Vienna recommendations in the field of science and technology information. In this connection the positions adopted at the Conference were absolutely clear. The United Nations Conference should arrange for the international community to be in a position to turn the intellectual and institutional achievements of UNISIST to the best possible account, and should avoid launching any new programme or establishing new machinery which could not do other than lead to duplication of work, not to say unnecessary complication and expenditure. The Conference has shown that, in UNISIST, Unesco possesses appreciable possibilities: abundant experience in international co-operation, a set of conceptual tools whose quality and validity is recognized on all sides, human resources which, though not on a large scale, are nevertheless more important than those of any other organization operating at international level, and above all a capital of confidence within Member States and non-governmental organizations and a unique network of professional relationships enabling it to make the best possible use of the specialized skills available throughout the world in the sphere of science and technology information.

One of the recommendations you have just adopted requests me to forward the conclusions of your work to the United Nations Conference. I shall do this immediately, and am convinced that the Vienna Conference cannot fail to be aware of the implications, indeed I might say the logic of the message you are sending it. It is moreover my intention, in the address I shall deliver at Vienna during the United Nations Conference, to speak at length on your work, stressing that your Conference fulfilled the responsibilities laid on it in the most convincing possible way. I take this opportunity of thanking His Excellency Mr. Frank da Costa for his participation in the work of this Conference.

It only remains for me to thank you all again, and to hope that those of you who are leaving Paris will have a pleasant journey home.

ANNEX III

LIST OF DOCUMENTS

A. Conference documents

1. Working documents

Provisional Agenda	PGI/UNISIST II/1
Annotated Provisional Agenda	PGI/UNISIST II/2
Provisional Rules of Procedure	PGI/UNISIST II/3
Main Working Document	PGI/UNISIST II/4

2. Reference documents

Selective List of Activities in the field of Information	PGI/UNISIST II/REF. 1
UNCSTD, Preliminary Draft Programme of Action	PGI/UNISIST II/REF. 2

B. Information documents

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ANNEXE IV/ANNEX/ANEXO/ ملحق

LISTE DES PARTICIPANTS/LIST OF PARTICIPANTS/LISTA DE PARTICIPANTES

قائمة المشتركين /

Les noms et titres qui figurent dans la liste ci-après sont reproduits dans la forme où ils ont été communiqués au Secrétariat par les intéressés. Les pays sont mentionnés dans l'ordre alphabétique français.

Names and titles in the following list are reproduced as handed in to the Secretariat by those concerned. Countries are shown in the French alphabetical order.

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أدرجت الأسماء والألقاب فى هذه القائمة كما قدمتهـــا
للسكرتارية الوفود المعنية . ورتبت أسماء البلاد حسب
الترتيب الهجائى الانجليزى

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M. Henrique MACHADO JORGE
Directeur,
Centre national de la recherche scientifique et technologique

M. Carlos PULIDO
Directeur,
Centre national d'information scientifique et technique

Mme Alda CABRAL-GASPAR
Directeur, Services d'information, Département central de planification,
Président du groupe de travail permanent pour la documentation et l'information
socio-économique

Mme Teresa PINTO MENDES
Bibliothécaire en chef, Bibliothèque générale de l'Université de Coimbra,
Secrétariat d'Etat à la culture

QATAR/KATAR/КАТАР/ قطر

Dr. Mohamed Monir MORSI
Acting Director, Educational Research and Development Centre,
University of Qatar
(Head of Delegation)

Mr. A. AL-KUBAISI
Graduate Assistant, University of Qatar

Mr. H. AL-MIDFA
Graduate Assistant, University of Qatar

RÉPUBLIQUE ARABE SYRIENNE/SYRIAN ARAB REPUBLIC/REPUBLICA ARABE SIRIA/
СИРИЙСКАЯ АРАБСКАЯ РЕСПУБЛИКА/ الجمهورية العربية السورية

Dr Farid EL-BUSTANI
Directeur général, Bureau central des statistiques
(Chef de la délégation)

M. Abdul-Rahim AL-SIBEI
Directeur des recherches, Ministère au Plan

Dr Azdullah MUFTI
Chef, Département informatique, centre de recherches scientifiques

Mme Houda NAHAS
Bibliothécaire, centre de recherches scientifiques

REPUBLIQUE DEMOCRATIQUE ALLEMANDE/GERMAN DEMOCRATIC REPUBLIC/
REPUBLICA DEMOCRÁTICA ALEMANA/ГЕРМАНСКАЯ ДЕМОКРАТИЧЕСКАЯ РЕСПУБЛИКА/
جمهورية المانيا الديمقراطية

Mr. Hans OCH
Director, Central Institute for Information and Documentation
(Head of Delegation)

Mr. Klaus PLOETZ
Head, Department of Work in International Library Organizations

Mr. Winfried FISCHER
Director, Information and Documentation Centre,
Ministry of Exterior Commerce

M. Peter EBERTZ
Attaché,
Permanent Delegation of the German Democratic Republic to Unesco

REPUBLIQUE POPULAIRE DEMOCRATIQUE DE COREE/DEMOCRATIC PEOPLE'S
REPUBLIC OF KOREA /КОРЕЙСКАЯ НАРОДНО-ДЕМОКРАТИЧЕСКАЯ РЕСПУБЛИКА/
جمهورية كوريا الشعبية الديمقراطية

M. Dong-Hyok RI
Délégué permanent p.i., délégation permanente de la République populaire
démocratique de Corée auprès de l'Unesco
(Chef de la délégation)

M. Young-Deuk KIM
Premier Secrétaire, délégation permanente de la République populaire
démocratique de Corée auprès de l'Unesco

REPUBLIQUE SOCIALISTE DU VIET NAM/SOCIALIST REPUBLIC OF VIET NAM/
СОЦИАЛИСТИЧЕСКАЯ РЕСПУБЛИКА ВЬЕТНАМ/ جمهورية فيتنام الاشتراكية
M. Le TAM
Membre du Comité d'Etat pour les sciences et techniques

REPUBLIQUE SOCIALISTE SOVIETIQUE DE BIELORUSSIE/BYELORUSSIAN SOVIET
SOCIALIST REPUBLIC/REPÚBLICA SOCIALISTA SOVIÉTICA DE BIELORRUSIA/
БЕЛОРУССКАЯ СОВЕТСКАЯ СОЦИАЛИСТИЧЕСКАЯ РЕСПУБЛИКА/
جمهورية بيلوروسيا الاشتراكية السوفييتية

M. Youry G. KOVALIOV
Directeur adjoint,
Institut de recherche sur l'information scientifique et technique auprès de la
Commission de planification

M. Igor ROUDNIK
Premier Secrétaire,
Délégation permanente auprès de l'Unesco

REPUBLIQUE SOCIALISTE SOVIETIQUE D'UKRAINE/UKRAINIAN SOVIET SOCIALIST REPUBLIC/REPÚBLICA SOCIALISTA SOVIÉTICA DE UCRANIA/УКРАИНСКАЯ СОВЕТСКАЯ СОЦИАЛИСТИЧЕСКАЯ РЕСПУБЛИКА/ جمهورية أوكرانيا الاشتراكية السوفييتية

M. Sava J. OGORODNIK
Directeur, Institut de l'information scientifique et technique et des recherches techniques et économiques de la République socialiste soviétique d'Ukraine
(Chef de la délégation)

M. Nikolaf T. RECHETNIAK
Délégué permanent de la République socialiste soviétique d'Ukraine auprès de l'Unesco
(Chef adjoint de la délégation)

REPUBLIQUE-UNIE DE TANZANIE/UNITED REPUBLIC OF TANZANIA/ REPÚBLICA UNIDA DE TANZANIA/ОБЪЕДИНЕННАЯ РЕСПУБЛИКА ТАНЗАНИЯ/ جمهورية تانزانيا المتحدة

Mr. M. MVAA
Chief librarian, University of Dar-es-Salaam
(Head of Delegation)

Mr. H.M. NGULI
Scientific Officer, Tanzania National Scientific Council

Mr. Donald M. KUSENHA
Deputy Permanent Delegate, Delegation of the United Republic of Tanzania to Unesco

ROYAUME-UNI DE GRANDE-BRETAGNE ET D'IRLANDE DU NORD/UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND/REINO UNIDO DE GRAN BRETAÑA E IRLANDA DEL NORTE/СОЕДИНЕННОЕ КОРОЛЕВСТВО ВЕЛИКОБРИТАНИИ И СЕВЕРНОЙ ИРЛАНДИИ/ المملكة المتحدة لبريطانيا العظمى وايرلندا الشمالية

Mr. L.C.J. MARTIN
Ministry of Overseas Development
(Head of Delegation)

Mr. G.M. STEGMANN
Ministry of Overseas Development

Mr. J.C. GRAY
Director, Research and Development Department, British Library

Mr. J.V. COWEN
Science and International Relations Branch, Department of Education and Science

Mr. T.I. BELL
Librarian, Bank of England

Mr. K.A. CARDY
Deputy Permanent Delegate of the United Kingdom to Unesco

RWANDA/РУАНДА/ رواندا

M. Alexandre MWEREKANDE
Délégué permanent adjoint, délégation permanente du Rwanda auprès de l'Unesco

SENEGAL/СЕНЕГАЛ/ السنغال

M. Aladji THIAM
Premier Conseiller, délégation permanente du Sénégal auprès de l'Unesco

M. Laminé DIAKHATE
Délégué permanent adjoint, délégation permanente du Sénégal auprès de l'Unesco

SOUDAN/SUDAN/СУДАН/ السودان

Dr. Alfatih I. HAMAD
Permanent Delegate, Permanent Delegation of Sudan to Unesco

Mrs. Cécile WESLEY-ISTASI
Director, National Documentation Centre

SUEDE/SWEDEN/SUECIA/ШВЕЦИЯ/ السويد

Mr. Björn TELL
Head Librarian, Lund University
(Head of Delegation)

Mr. Stefan SCHWARZ
Head Librarian, Royal Institute of Technology

Mr. Sten BERGLUND
Secretary, National Committee for UNISIST

Mr. Finn BERGSTRAND
Deputy Permanent Delegate, Permanent Delegation of Sweden to Unesco

SUISSE/SWITZERLAND/SUIZA/ШВЕЙЦАРИЯ/ سويسرا

M. Jean-Pierre SYDLER
Directeur de la Bibliothèque de l'Ecole polytechnique fédérale de Zürich,
Membre de la Commission fédérale pour la coordination dans le domaine de la documentation scientifique
(Chef de la délégation)

S. Exc. M. Charles HUMMEL
Ambassadeur,
Délégué permanent de la Suisse auprès de l'Unesco

M. Roger FORCLAZ
Adjoint scientifique à l'Office de la science et de la recherche du Département fédéral de l'intérieur

Mme Jacqueline JUILLARD
Ingénieur EPFL-SIA, présidente de la Section "sciences exactes, naturelles et appliquées", Commission nationale suisse pour l'Unesco

TCHECOSLOVAQUIE/CZECHOSLOVAKIA/CHECOSLOVAQUIA/ЧЕХОСЛОВАКИЯ/ تشيكوسلوفاكيا

Mr. Zdenek BASL
Head of Department, Federal Ministry of Technology and Investments
(Head of Delegation)

Mr. Eugen JIRSA
Deputy Director, Central Office of Scientific, Technical and Economic Information

Dr. Hana VITKOVA
Head of Department, Federal Ministry for Technology and Investments

TOGO/ТОГО/توجو

S. Exc. le Dr N'Sougan AGBLEMAGNON
Ambassadeur, Délégué permanent du Togo auprès de l'Unesco

TUNISIE/TUNISIA/TUNEZ/ТУНИС/ تونس

S. Exc. M. Mustapha MASMOUDI
Ambassadeur,
Délégué permanent de la Tunisie auprès de l'Unesco
(Chef de la délégation)

Mme Fatma CHAMAM
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Centre universitaire de documentation scientifique et technique,
Ministère de l'enseignement supérieur et de la recherche scientifique

M. Ali ROMDHANE
Directeur,
Centre national de documentation agricole,
Ministère de l'enseignement supérieur et de la recherche scientifique

M. Moncef CHENOUFI
Directeur de l'Institut de presse et des sciences de l'information

M. Hachmi BEN AMMAR
Délégation permanente de la Tunisie auprès de l'Unesco

TURQUIE/TURKEY/TURQUÍA/ТУРЦИЯ/ تركيا

M. Yavuz ERGUVEN
Délégué permanent de la Turquie auprès de l'Unesco

UNION DES REPUBLIQUES SOCIALISTES SOVIETIQUES/UNION OF SOVIET SOCIALIST REPUBLICS/UNIÓN DE REPÚBLICAS SOCIALISTAS SOVIÉTICAS/ СОЮЗ СОВЕТСКИХ СОЦИАЛИСТИЧЕСКИХ РЕСПУБЛИК/
اتحاد الجمهوريات الاشتراكية السوفييتية

M. N.B. ARUTJUNOV
Directeur,
Département pour l'information scientifique et technique,
Comité directeur pour la science et la technologie
(Chef de la délégation)

M. V.A. VINOGRADOV
Directeur de l'institut d'information de l'Académie des sciences de l'URSS

M. K.P. ROUBANIK
Chef de section,
Commission de l'URSS pour l'Unesco,
Ministère des affaires étrangères

Professeur A.I. MIKHAILOV
Directeur,
Institut d'information scientifique et technique de l'Académie des sciences de l'URSS (VINITI)

M. V.V. SYTCHEV
Directeur,
Centre d'information scientifique et technique (VINITI)

VENEZUELA/ВЕНЕСУЭЛА/ فنزويلا

M. José L. SILVA-MENDEZ
Consejero, Delegación de Venezuela ante la Unesco

Sra. Sonia RODRIGUEZ-COVA
Delegación de Venezuela ante la Unesco

YEMEN/ЙЕМЕН/اليمن

Mr. Abderrahman ASSENIDAR
Second Secretary, Embassy of the Arab Republic of Yemen

YEMEN DEMOCRATIQUE/DEMOCRATIC YEMEN/ДЕМОКРАТИЧЕСКИЙ ЙЕМЕН/
جمهورية اليمن الديمقراطية الشعبية

M. Mohamed BIN SAHL
Chargé d'affaires a.i. auprès de l'Ambassade de la République
démocratique du Yémen

YOUGOSLAVIE/YUGOSLAVIA/ЮГОСЛАВИЯ/ يوغسلافيا

Dr Uros PERUSKO
Président du Conseil pour la recherche scientifique de la
République socialiste de Croatie
(Chef de la délégation)

Dr Inès WESLEY-TANASKOVIC
Institut de documentation médico-militaire, Belgrade

Dr Stefan ADAMIC
Président du Comité yougoslave pour l'UNISIST

Dr Djuro DEZELIC
Président,
Commission pour l'information scientifique de Yougoslavie

Dr Miodrag PETROVIC
Directeur,
Laboratoire pour le système informatique de l'Institut "Boris Kidric", Vinca

ZAIRE/ЗАИР/ زائير

M. R. NDESHYO
Secrétaire d'Etat à l'enseignement supérieur et à la recherche scientifique
(Chef de la délégation)

M. Ngabu LUANIKA
Secrétaire général adjoint de la Commission nationale zaïroise pour l'Unesco

M. Demodetdo Yako PENDJE
Ministre Conseiller,
Délégué permanent adjoint du Zaïre auprès de l'Unesco

M. Fefe Bochoa ITEKE
Délégué général à l'institut des recherches scientifiques

M. T. MALEMBE
Directeur général de l'institut des sciences et des techniques de l'information
(Université nationale du Zaïre Kinshasa)

M. Luhata TOLELA /
Directeur,
Coordinateur des activités scientifiques

ZAMBIE/ZAMBIA/ЗАМБИЯ/زامبيا

S. Exc. M. Isaac R.B. MANDA
Ambassador, Permanent Delegate of Zambia to Unesco
(Head of Delegation)

M. Benjamin MWEENE
Dean, School of National Science (University of Zambia)

II. ETATS NON MEMBRES/NON-MEMBER STATES
ГОСУДАРСТВА, НЕ ЯВЛЯЮЩИЕСЯ ЧЛЕНАМИ/
الدول غير الأعضاء

DJIBOUTI/ДЖИБУТИ/جيبوتى

Mlle Roudha ABDOULATIF

SAINT SIEGE/HOLY SEE/SANTA SEDE/ВАТИКАН/الكرسى البابوى

Mgr. Renzo FRANA
Observateur permanent du Saint-Siège auprès de l'Unesco

III. ORGANISATIONS DU SYSTEME DES NATIONS UNIES
ORGANIZATIONS OF THE UNITED NATIONS SYSTEM
ОРГАНИЗАЦИИ СИСТЕМЫ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ
منظمات الأمم المتحدة

Nations Unies/United Nations

M. W. DE SOUZA
Interregional Adviser for Inter-Sectoral Matters, Department of Technical Co-operation for Development (New York)

Mr. H. WALDNER
Chief Librarian (Geneva)

Organisation des Nations Unies pour le développement industriel (ONUDI)/
United Nations Industrial Development Organization (UNIDO)

Mr. R. TILLETTE de MAUTORT
Chief, Industrial Information Section

Programme des Nations Unies pour l'environnement (PNUE)/
United Nations Environment Programme (UNEP)

Mr. T. MUNETIC
Chief, Network Development, Infoterra

Mr. Peter LEES
Chief, Infoterra Computer Unit

Université des Nations Unies (UNU)/United Nations University

Dr Inès WESLEY-TANASKOVIC

Bureau interorganisations pour les systèmes d'information (BIO)/
Inter-organization Board for Information Systems (IOB)

Mr. J. WRIGLEY
Director

Mme N. DUSOULIER

Organisation internationale du travail (OIT)/International Labour Organisation (ILO)

M. Theo BALDWIN
Chef du Bureau des systèmes d'information

Organisation des Nations Unies pour l'alimentation et l'agriculture/
Food and Agriculture Organization of the United Nations (FAO)

Mr. Florea CAZACU
Director, Library and Documentation Systems Division

Mr. Emile SAMAHA
Project Adviser, Systems and Projects Development Branch

Organisation mondiale de la santé (OMS)/World Health Organization (WHO)

Dr F. RODRIGUEZ ALONSO
Administrateur technique, Bureau des services de bibliothèque et de documentation en matière de santé

Mr. V. OLCHANSKI
Information Systems Analyst, Information Systems Programme

Organisation mondiale de la propriété intellectuelle (OMPI)/
World Intellectual Property Organization (WIPO)

Mr. Felix A. SVIRIDOV
Deputy Director-General

Union internationale des télécommunications (UIT)/International Telecommunication Union (ITU)

M. A.G. EL-ZANATI
Chef de la Bibliothèque centrale et du Service de documentation

UNITED NATIONS CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (UNCSTD)

S. Exc. M. Joao Frank DA COSTA
Secrétaire général

IV. ORGANISATIONS INTERGOUVERNEMENTALES المنظمات الدولية الحكومية
INTERGOVERNMENTAL ORGANIZATIONS
МЕЖПРАВИТЕЛЬСТВЕННЫЕ ОРГАНИЗАЦИИ

1. NON REGIONALES/NON-REGIONAL/ НЕ РЕГИОНАЛЬНЫЕ/ غير الاقليمية

Agence de coopération culturelle et technique/Agency for Cultural and Technical Co-operation

M. Minh Tuong NGUYEN
Responsable de la coopération scientifique pour le développement

Bureau intergouvernemental de l'informatique/Intergovernmental Bureau for Informatics (IBI)

M. Olivier RATEAU
Directeur général adjoint

M. André MICHEL
Chef du Service informatique

2. REGIONALES/REGIONAL/РЕГИОНАЛЬНЫЕ/ الاقليمية

AFRIQUE

Communauté économique des Pays des Grands Lacs

M. T.B. MVILAKANI
Secrétaire exécutif adjoint

AMERIQUE LATINE ET CARAIBES/LATIN AMERICA AND THE CARIBBEAN

Bureau d'éducation ibéro-américain/Ibero-American Bureau of Education (IBE)

S. Exc. M. D. Rémolo BOTTO
Ambassador, Representante Permanente de la Oficina de Education Iberoamericana

ETATS ARABES/ARAB STATES

Organisation arabe pour l'éducation, la culture et la science/The Arab Educational, Cultural and Scientific Organization (ALECSO)

M. Mongi BEN-AMOR
Délégué permanent adjoint

Fédération des Conseils Arabes de la Recherche Scientifique/Federation of Arab Scientific Research Councils

Dr. Nazar AL-SHAWI
Secretary-General

Prof. D. Nazar HALIL WAFI
Dean, College of Engineering

Banque arabe pour le développement économique en Afrique (BADEA)/Arab Bank for Economic Development in Africa

M. Faouzi MAHRESI
Délégué

Centre arabe pour l'étude des zones et terres arides/Arab Center for the Studies of Arid Zones and Dry Lands

Mr. Ouni JALAHIJ
Chief, Library and Documentation Unit

EUROPE

Commission des communautés européennes (Communauté économique européenne) (CEE)/Commission of European Communities (European Economic Communities)

M. Renato BATTI
Administrateur principal

Agence spatiale européenne/European Space Agency (ESA)

Mr. N.E.C. ISOTTA
Head, Information Retrieval Service, ESRIN

Organisation de coopération et de développement économiques (OCDE)/Organization for Economic Co-operation and Development (OECD)

M. Christian HEIMPEL
Chef, Division des échanges d'expériences des publications et de la documentation, Centre de développement

M. Abelardo FERNANDEZ-OLAZABAL
Administrateur, Unité des politiques de l'information, de l'informatique et des communications, direction de la science, de la technologie et de l'industrie

M. Julien ENGEL
Consultant

Centre international pour l'information scientifique et technique/International Centre for Scientific and Technological Information (ICSTI)

Prof. L.N. SUMAROKOV
Director

V. ORGANISATIONS INTERNATIONALES NON GOUVERNEMENTALES EN RELATION DE CONSULTATION AVEC L'UNESCO/INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS IN CONSULTATIVE RELATIONSHIP WITH UNESCO/МЕЖДУНАРОДНЫЕ НЕПРАВИТЕЛЬСТВЕННЫЕ ОРГАНИЗАЦИИ, ПОДДЕРЖИВАЮЩИЕ КОНСУЛЬТАТИВНЫЕ ОТНОШЕНИЯ С ЮНЕСКО/ المنظمات الدولية غير الحكومية

Catégorie "A"/Category "A" /Категория "A"/

Conseil international des archives (CIA)/International Council on Archives (ICA)

M. Ch. KECSKEMETI
Secrétaire exécutif

Conseil international des unions scientifiques (CIUS)/International Council of Scientific Unions (ICSU)

Professeur Cornelis de JAGER
Président

Professor E.S. AYENSU
Secretary-General, International Union of Biological Sciences

Professor J. SAHADE
Chairman of POGSI

Dr. J.L. LLOYD
Member-Secretary of POGSI

Mr. F.W.G. BAKER
Executive Secretary

Mrs. Marthe ORFUS
Representative of ICSU-AB

Mrs. Phyllis GLAESER
Représentative of CODATA

Fédération internationale des associations de bibliothécaires et des bibliothèques (FIAB)/International Federation of Library Associations and Institutions (IFLA)

Professor Preben KIRKEGAARD
President of IFLA, Rector, The Royal School of Librarianship, Copenhagen

Mr. A.L. van WESEMAEL
Deputy Secretary-General of IFLA

Fédération internationale de documentation (FID)/International Federation for Documentation

Professor Dr. H. ARNTZ
President of FID

Mr. K.R. BROWN
Secretary-General of FID

Organisation internationale de normalisation (OIN)/International Organization for Standardization (ISO)

Mr. Bengt NORBRINK
Director, Information and Public Relations

Union des Associations techniques internationales (UATI)/Union of International Engineering Organizations

Mme N. FAURIOL
Ingénieur documentaliste, Institut de la Soudure

Catégorie "B"/Catégory "B" /Категория "B"/ الفئة "باء"/

Association internationale du cinéma scientifique/International Scientific Film Association

Mme Suzanne DUVAL
Directeur administratif

Comité international pour l'information et la documentation en sciences sociales (CIDSS)/ International Committee for Social Science Information and Documentation

M. J. MEYRIAT
Secrétaire général

Fédération européenne d'associations nationales d'ingénieurs/European Federation of National Associations of Engineers

M. M. GUERIN
Secrétaire général adjoint

Fédération internationale pour le traitement de l'information/International Federation for Information Processing (IFIP)

Prof. A.A. VERRIJN-STUART
Chairman, Technical Committee TC8

Groupement international des éditeurs scientifiques, techniques et médicaux/International Group of Scientific, Technical and Medical Publishers

M. Paul NIJHOFF ASSER
Secretary

Catégorie "C"/Category "C"/Категория "C"/

Centre international d'information sur les sources de l'histoire balkanique/International Information Centre on the Sources of Balkan History

Prof. N. TODOROV
Secretary-General

VI. SECRETARIAT DE LA CONFERENCE/SECRETARIAT OF THE CONFERENCE СЕКРЕТАРИАТ КОНФЕРЕНЦИИ/ سكرتارية المؤتمر العام

Directeur général de l'Unesco/Director-General of Unesco

M. Amadou-Mahtar M'Bow

Directeur général adjoint Unesco/Deputy Director-General of Unesco

M. F. Mayor

Sous-Directeur général pour les études et la programmation/Assistant Director-General for Studies and Programming

M. J. Knapp

Secrétaire de la Conférence/Secretary of the Conference

M. J. Tocatlian
Director, Division of the General Information Programme (PGI)

Secrétaire adjoint de la Conférence/Assistant Secretary of the Conference

M. K. Roberts (PGI)

Assistance technique au Bureau de la Conférence et au comité de rédaction/Technical Assistance to Conference Steering Committee and Drafting Committee

M. W. Löhner (PGI)

Conseils techniques/Technical Advice

M. W. Löhner (PGI)
M. L.E. Samarasirghe (PGI)
M. P. Vasarhelyi (PGI)
M. A. Winters (PGI)

Coordination en vue de l'organisation de la Conférence/Co-ordination of Conférence arrangements

M. V. Montviloff (PGI)
Mme D. Cogan (BEP)
Mme M. F. Mynard-Burcez

Exposition/Exhibition

M. P. Vasarhelyi (PGI)
Mme E. Beyerly (PGI)
Mme U. Hyvönen (PGI)
Mme S. Mahin (PGI)
M. S. Matsumoto (PGI)
Mme L. Siitonen
Mme M. Moreau (PGI)
Mme J. Jenkins (PGI)

Groupe de rédaction du secrétariat/Secretariat Drafting Group

Mme C. Coudert-Schklowski (PGI)
M. F. Evans (PGI)
M. M. Harada (PGI)
M. J. Rose (PGI)
Mme J. Martinez (PGI)
Mlle R. Célérier (PGI)
Mme D. Guiblin (PGI)
Mlle J. Ingram (PGI)

Inscription, réception et hospitalité/Registration, Reception and Hospitality

Mme F. Gallo (PGI)
M. N. Varkados (PGI)
Mme H. Boyer (PGI)
Mme I. de Roo (PGI)
Mlle S. McDowall (PGI)
Mme P. Calabuig (GES)
Mme M. Duncan Offerhaus (GES)

Documentation pour la Conférence/Conference Documentation

M. Y. Courrier (PGI)
Mme M. Moreau (PGI)

Production des projets de recommandation/Production of Draft Recommendations

Mme A. Schurek (PGI)
Mlle C. Cros (PGI)
Mme M. Hernandez (PGI)
Mme C. Katz (PGI)
Mlle P. Lockie (PGI)
Mme D. McClure (PGI)

Tâches diverses/Spécial Assignments

Mr. C. Gottschalk (PGI)
Mme A. Carré (PGI)
Mlle N. Charlot (PGI)
Mme C. Fort (PGI)
Mlle V. Maggio (PGI)
Mlle C. Meyler (PGI)
Mlle C. Rabdeau (PGI)

Consultants

M. S. Adams
M. R. Aubrac
M. H. Dierickx
M. H. Felber
Prof. K. Fialkowski
Mme M. Rosenbaum.